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## ABSTRACT

The aim of this study was to determine the influence of the school on the level of thought of the child. The influence of the school was defined as the number of completed years of schooling.

Two methods of enquiry were used to investigate the influence of schooling on the level of thought the pupils have reached. A study of the literature was made to give an outline of different views of cognitive development, the relative influence of heredity and environment on cognitive development, the influence of certain environmental factors on cognitive development, of black education in South Africa and of the black child as a culturally deprived child. The empirical method was used to test the validity of some hypotheses which were formulated after a discussion of the influence of certain environmental factors on cognitive development.

The models of Gagné, Bruner and Piaget were discussed with emphasis on the explanations they offer for cognitive development. The implications of these models for this study were abstracted. It was concluded that they all emphasize the value of schooling for cognitive development.

The study was based on Piaget's model of cognitive development. According to Piaget the school must be concerned with the development of logical thinking. To develop the ability of logical thinking the child progresses through different stages of cognitive development by means of the processes of organization and adaptation.

Cognitive development is influenced by organic growth, experience, social interaction and equilibration. These factors can be classified as factors of heredity (organic growth) and factors of the environment (experience, social interaction and

equilibration). As the school is an environmental factor it was necessary to discuss the influence of the environment on cognitive development against the background of the influence of heredity on cognitive development. Nothing can be done to alter the organic structure of the child, but much can be done to manipulate the environment to influence the cognitive development of the child. It is therefore of the utmost importance that one should take notice of how environmental factors influence cognitive development.

Accordingly a study was made of the chief environmental factors which influence cognitive development. The influence of culture, socio-economic status, some family characteristics and of the school on cognitive development, was discussed. The influence of culture, socio-economic status and some family characteristics on cognitive development was discussed to form a framework against which the influence of the school on cognitive development could be evaluated. After having studied the influence of these different factors on cognitive development the conclusion was reached that schooling, as an agent for cognitive stimulation and the resultant cognitive development, is of utmost importance the more primitive the culture of the child, the lower his socio-economic status, the bigger the family and the lower the order of birth of the child. The school must provide the cognitive stimulation which neither the culture nor the home can give the child.

As conservation forms an important part of Piaget's view of cognitive development, special attention was paid to the influence of schooling on conservation. Some researchers have reported that conservation is not influenced by schooling, as unschooled children were found to be capable of conservation of volume. It was found that the child can develop his ability to conserve through his daily experiences without the aid of schooling. Although schooling is not of the utmost importance for the development of the ability to conserve, schooling is important for the development of ability to classify, combinatorial thinking, language development and intellectual (or cognitive) development.

As the study was undertaken in black schools a brief outline of the development of black education in South Africa was given. Recent developments in black education were discussed with special reference to factors in black education which may have a negative influence on cognitive development. These factors are the teacher-pupil ratio (1:48), the system of double sessions,\* no compulsory education, the late age of admission (seven years), the heterogeneous age distribution in classes, not all the pupils receiving mother tongue instruction, a high percentage of drop-outs in the primary school and poorly qualified teachers. Positive factors are: syllabi which are of the same standard as syllabi used in white schools, teachers showing a keen interest to better their qualifications, the free issuing of textbooks and an increase in enrollment.

After a description of and discussion of the characteristics of the culturally deprived child, with special reference to the factors in the environment which have a negative influence on cognitive development, some criteria were isolated for cultural deprivation. These criteria are: poverty, overcrowded houses, a lack of cognitive stimulation, and undeveloped and undifferentiated perceptual abilities. If the black child is evaluated against these criteria, only one conclusion can be reached and that is that the black child is a culturally deprived child. As a culturally deprived child he is dearly in need of schooling to provide the opportunities for cognitive development which his environment cannot provide.

The discussion of the influence of certain environmental factors on cognitive development lead to the following general hypothesis: there is a relationship between certain environmental factors and the level of cognitive development of the child. The relationship between the number of years of schooling and cognitive development was of special interest.

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\* After this study had been completed the system of double sessions was replaced by the platoon system, with the immediate result of the teacher-pupil ratio dropping from 1:48 to 1:41.

To test the validity of this hypothesis experiments involving the following were conducted:

The pupils of two types of primary schools, community schools and farm schools, formed the population for this study. The community schools were all located in the black township of Potchefstroom while the farm schools were all located in the district of Potchefstroom. Six hundred and fifty black pupils from the community schools were chosen by means of randomized stratified cluster sampling. Two classes of each standard (substandard A to standard 4) were included in the sample. Of these 650 pupils, who were all tested, a smaller sample of 308 pupils were randomly chosen. The test results of these 308 pupils, together with the test results of 181 pupils from farm schools were analyzed by means of multiple regression analysis.

The level of thought or cognitive development of each pupil was determined by means of a group test measuring the level of thought attained. This test was developed by the author and was based on piagetian-type questions. The test was administered in the mother tongue of the pupils (Tswana). A former black schoolmaster was trained by the author to apply the tests. As he was unfamiliar with the piagetian or clinical method of testing and as most of the pupils in substandards A and B could not write or express their thoughts through writing, only multiple choice questions were included in the test. Answers or responses were marked with crosses in the appropriate squares. The raw scores obtained in this test were used in the testing of the validity of the different hypotheses which were set.

As an IQ test for students at this level (substandard A to standard 4) was not available, the Scholastic Aptitude Test for Pupils in Standards 2 and 3 (the SATB) was used. Apart from giving a measure of the scholastic aptitudes of pupils, the SATB also gives an indication of a pupil's general intellectual ability. Two scores were obtained from this test:

a raw score and a standard score (Z-score) which were calculated for each standard(1 to 4) from the raw scores to control the influence of schooling on the development of aptitude.

The validity and reliability of each of the measuring instruments were discussed and it was found that they were valid and reliable in all cases.

A questionnaire was set to get an indication of the level of socio-economic status (SES) of each pupil. Information regarding age, sex, type of school (town or farm school) and school standard (from which years of schooling were calculated) were obtained from the questionnaire.

The following factors (independent variables) were included in the basic set of independent variables: Z-score, SES, sex, age, years of schooling and type of school.

As the SATB can only be used for pupils in standard one to four and as pupils from substandards A and B were also included in the sample, the analyses had to be made for two groups, group 1 and group 2. The pupils were divided into two groups on the basis of the number of independent variables which were applicable to them. The following independent variables were applicable to group 1 (standards 1 to 4). Z-score, sex, age, years of schooling, SES and type of school. All these independent variables except Z-score were applicable to group 2 (substandard A to standard 4).

Multiple regression analysis was used to test the data.

The primary aim of this investigation was to determine the influence of the school on the level of thought of the child. In order to determine the influence of the school on the level of thought, the influence of all the independent variables in the basic set of independent variables on level of thought was calculated. To determine the relative influence of years of schooling on level of thought Z-score, SES, sex, age and

type of school were used as control variables after which their relative influence on the level of thought was determined by means of a stepwise analysis of regression.

By determining the relative influence of years of schooling, Z-score, SES, age, sex and type of school on level of thought, it was possible to compare their relative influence on level of thought.

To determine the influence of some family characteristics (such as the size of the family, number of children in the family and order of birth) on level of thought, SES as an independent variable, was replaced by these factors together with educational level of the parents, occupation of the parents, aspiration level and economical circumstances.

The above-mentioned analyses, with level of thought as dependent variable, were repeated, with conservation, as dependent variable instead of level of thought.

The influence of schooling on conservation is of special importance. Piaget proposes that an inability to conserve substance, weight or volume, is an indication of a pre-logical level of thought. According to Piaget's view of the invariable order of the different stages of cognitive development, the child must first master the ability to conserve before he can reach the level of formal operational thought.

The relative influence of years of schooling and of level of thought on the SATB (raw score) and Z-score were also determined.

The main results of the analyses are summarised in the following table:

THE CONTRIBUTION OF EACH OF THE INDEPENDENT VARIABLES TO VARIANCE IN LEVEL OF THOUGHT AND CONSERVATION ABILITY

Variable name	Level of thought				Conservation			
	Group	Difference in R <sup>2</sup>	Value of F	df	Group	Difference in R <sup>2</sup>	Value of F	df
Z-score	1	0,0653	28,01 <sup>x</sup>	1;308	1	0,0406	16,33 <sup>x</sup>	1;308
Years of schooling	1	0,1127	77,07 <sup>x</sup>	1;308	1	0,0977	39,29 <sup>x</sup>	1;308
Age	2	0,0101	7,64 <sup>x</sup>	1;487	2	0,0065	4,48 <sup>xx</sup>	1;487
Sex	2	0,0208	15,77 <sup>x</sup>	1;487	2	0,0184	12,69 <sup>x</sup>	1;487
SES	2	0,0031	2,34	1;487	2	0,0042	2,9	1;487
Family size	2	0,0009	0,68	1;487	2	0,0154	11,0 <sup>x</sup>	1;487
Number of children	2	0,0002	0,15	1;487	2	0,0030	2,14	1;487
Birth order	2	0,0003	0,23	1;487	2	0,0153	10,9 <sup>x</sup>	1;487
								** p<0,05
								* p<0,01

An analysis of the results indicated that Z-score, years of schooling, age and sex made a significant contribution to level of thought and ability to conserve. Socio-economic status had no influence on level of thought or on ability to conserve. Of the family characteristics only family size and order of birth had any influence on the ability to conserve while level of thought was not influenced by any of these factors.

It seemed that of the various factors (Z-score, SES, age, sex and years of schooling), years of schooling contributed the most to variance in both level of thought and ability to conserve. When the influence of years of schooling was controlled, Z-score, sex and age had only a small influence on level of thought and ability to conserve. It could not be determined whether SES had any influence on either level of thought or the ability to conserve.

It could not be determined with certainty whether family traits such as size of family, number of children in the family and order of birth had any influence on level of thought and the ability to conserve. The conclusion was reached that the environment and home of the black child (as a culturally deprived child) are not capable of providing the necessary cognitive stimulation for the child. The child is therefore dependent on the school for this stimulation.

In short, it can be said that the level of thought and the ability to conserve are influenced by the number of years of schooling. As it had been determined in this investigation that years of schooling had a positive influence on ability to conserve, the conclusion was reached that schooled children would reach the level of formal operational thought at an earlier age than unschooled children.

As a result of these findings the following proposals were made:

- \* As the home and environment of the black child do not provide sufficient stimulation for cognitive development serious thought should be given to lower the age of admission to the school as soon as possible in order to provide the child with an opportunity to share and benefit from the opportunities the school provide.
  
- \* As it has been found that the school is one of the most important factors that influence cognitive development, it is important that every child should have the opportunity to attend school. Education should therefore be made compulsory as soon as possible.

DENKVLAKTOETS: VOORTOETS IN AFRIKAANS

1. Kaart 1A

Verduidelik aan die leerlinge dat die twee stokkies ewe lank is. Wys nou kaart 1B en vra: Watter stokkie is nou die langste of is hulle ewe lank?

Sê aan die leerlinge: Merk julle antwoord in een van die blokkies by 1.

2. Kaart 2

Vra aan die leerlinge: Wie van Piet of Sam is die langste of is hulle ewe lank?

Sê aan die leerlinge: Merk julle antwoord in een van die blokkies by 2.

3. Kaart 3A

Verduidelik aan die leerlinge dat die lere ewe lank is.

Wys nou kaart 3B en vra: Dit is dieselfde lere. Watter leer is nou die langste of is hulle ewe lank?

Sê: Merk julle antwoord in een van die blokkies by 3.

4. Kaart 4A

Vra aan die leerlinge: Is Dawid en Petrus naby mekaar of is hulle ver van mekaar af?

Sê aan die leerlinge: Merk julle antwoord by 4.

5. Kaart 4B

Sê: Daar is nou 'n muur gebou tussen Dawid en Petrus.

Vra: Is hulle nog naby mekaar of is hulle ver van mekaar af?

Sê: Merk julle antwoord by 5.

6. Kaart 5

Sê: Daar is twee paaie van Ikageng na Soweto.

Vra: Is die paaie ewe lank of is die een langer as die ander?

Sê: Merk julle antwoord by 6.

7. Kaart 6A

Verduidelik aan die leerlinge dat Silas en Josef twee seuns is. Elkeen het 'n stuk grond waar hy kan speel. Verduidelik dat hulle grond ewe groot is.

Vra: Het Silas en Josef ewe veel plek om te speel?

Sê: Merk julle antwoord by 7.

8. Kaart 6B

Wys kaart 6B aan die leerlinge. Vertel aan hulle dat daar op elkeen se grond 'n hut, 'n huis, 'n kerk en 'n winkel gebou gaan word. Wys na die geboue. Verduidelik dat die huise ewe groot is en dat die hutte ewe groot is. Doen dieselfde met die winkels en die kerk.

9. Kaart 6C

Wys nou kaart 6C aan die leerlinge en verduidelik dat die hutte, huise, kerke en winkels nou klaar gebou is.

Vra nou: Het Silas en Josef nog ewe veel plek om te speel?

Sê: Merk julle antwoord by 8.

Vra: Wie het die meeste plek om te speel?

Sê: Merk julle antwoord by 9.

10. Kaart 7A

Sê: (a) Hier is twee reghoekige figure wat ewe groot is.

(b) Ons gaan van die rooi figuur die twee pienk blokke in die boonste ry wegneem en in die onderste ry sit.

Wys nou kaart 7B

Vra: Is die twee figure nog ewe groot of is die een groter as die ander?

Sê: Merk julle antwoord by 10.

11. Kaart 8A

Sê: Silas en Josef het elkeen 'n klomp beeste.

Vra: Wie het die meeste beeste of het hulle ewe veel beeste?

Sê: Merk julle antwoord by 11.

12. Wys nou kaart 8B  
Vra: Wie het nou die meeste beeste of het hulle ewe veel beeste?  
Sê: Merk julle antwoord by 12.
13. Kaart 9A  
Verduidelik dat dit 'n klomp knope is en dat daar blou knope is en dat daar rooi knope is.  
Vra: Is daar meer blou knope of is daar meer knope?  
Sê: Merk julle antwoord by 13.
14. Wys nou kaart 9B  
Vra: Is daar nou meer blou knope of is daar meer knope?  
Sê: Merk julle antwoord by 14.
15. Kaart 10  
Verduidelik dat dit 'n aantal kinders is en dat daar seuns en meisies is.  
Vra: Is daar meer meisies of is daar meer kinders?  
Sê: Merk julle antwoord by 15.
16. Kaart 11  
Verduidelik dat dit 'n aantal vierkante en 'n aantal sirkels is.
- (a) Vra: Is al die vierkante rooi?  
Sê: Merk julle antwoord by 16.
  - (b) Vra: Is al die bloues sirkels?  
Sê: Merk julle antwoord by 17.
  - (c) Vra: Is al die rooies vierkante?  
Sê: Merk julle antwoord by 18.
  - (d) Vra: Is al die sirkels blou?  
Sê: Merk julle antwoord by 19.
17. Kaart 12  
Verduidelik aan die leerlinge dat ons 'n kaart het met prente van diere daarop. Wys na die prente en sê wat dit is, of vra wat dit is.
- (a) Vra: Is daar meer eende as voëls?  
Sê: Antwoord by 20.

- (b) Vra: Is daar meer diere as eende?  
Sê: Antwoord by 21.
- (c) Vra: As al die eende in die wêreld vrek, sal daar dan nog voëls oorbly?  
Sê: Antwoord by 22.
- (d) Vra: As al die voëls in die wêreld vrek, sal daar nog eende oorbly?  
Sê: Antwoord by 23.
- (e) Vra: As al die diere in die wêreld vrek, sal daar nog eende oorbly?  
Sê: Antwoord by 24.
- (f) Vra: As al die eende in die wêreld vrek, sal daar nog diere oorbly?  
Sê: Antwoord by 25.
- (g) Vra: As al die diere in die wêreld vrek, sal daar nog voëls oorbly?  
Sê: Antwoord by 26.
- (h) Vra: As al die voëls in die wêreld vrek, sal daar nog diere oorbly?  
Sê: Antwoord by 27.

18. Kaart 13

Verduidelik dat daar twee rye blokkies is wat mekaar ontmoet. Sê dat daar in die boonste ry 'n hoed (wys), 'n pampoens (wys), 'n blaar (wys) en 'n emmer (wys) is. Sê dat daar in die ander ry 'n aantal sterre is. Verduidelik nou dat daar nog 'n klomp blokkies is met 'n voorwerp in elke blokkie. Sê dat een van hierdie voorwerpe in die oop blokkie pas.

Vra: Watter voorwerp pas in die oop blokkie?

Sê: Merk die voorwerp by 28.

19. Kaart 14

Vra: Hoeveel is  $12 + 6$ ?

Die leerlinge moet hardop sê hoeveel  $12 + 6$  is.

Vra: (Nou moet julle nie weer hardop antwoord nie). Wat moet ons doen om weer 12 te kry?

Sê: Merk julle antwoord by 29.

- 20 A.       Apparaat: Een kleibal.  
 Metode:     1. Toon die bal aan die leerlinge.  
               2. Druk die bal nou plat.  
               3. Vra aan die leerlinge: Het die plat stuk  
                   klei net soveel klei as wat die bal gehad  
                   het?  
               4. Sê aan die leerlinge: Merk julle antwoord  
                   by 30.
- 20 B.       Apparaat: Twee klei balle (blou en geel).  
 Metode:     1. Toon die twee balle aan die leerlinge en  
                   verduidelik dat die twee balle ewe groot is.  
               2. Vra: Is daar in die blou bal net soveel klei  
                   as in die geel bal?  
               3. Sê: Merk julle antwoord by 31.  
               4. Druk nou die geel bal plat. Wys die twee  
                   balle vir die leerlinge.  
               5. Vra: Is daar in die blou bal net soveel klei  
                   as in die geel bal?  
               6. Sê: Merk julle antwoord by 32.  
               7. Rol die geel stuk klei weer in die vorm  
                   van 'n bal en wys die twee balle aan die  
                   leerlinge.  
               8. Rol nou die geel bal in 'n lang slang.  
               9. Vra: Is daar in die slang net soveel klei  
                   as in die bal?  
               10. Sê: Merk julle antwoord by 33.
- 21 A.       Apparaat: Een kleibal en 'n skaal.  
 Metode:     1. Weeg die bal op die skaal.  
               2. Vra: Hoeveel weeg die bal?  
               3. Druk nou die bal plat.  
               4. Vra: Sal die plat stuk klei net soveel weeg  
                   as wat die bal geweeg het?  
               5. Sê: Merk julle antwoord by 34.

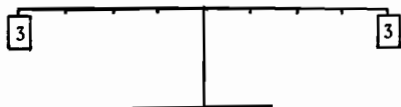
- 21 B.      Apparaat: 'n Skaal en twee kleiballe (blou en geel).  
 Metode:    1. Weeg die balle op die skaal om aan te toon dat hulle ewe swaar is of ewe veel weeg.  
             2. Druk nou die geel bal plat.  
             3. Vra: Is die twee stukke klei nog ewe swaar?  
             4. Sê: Merk julle antwoord by 35.  
             5. Rol die plat stuk klei nou weer in die vorm van 'n bal.  
             6. Wys die twee balle aan die leerlinge.  
             7. Rol nou die geel bal in die vorm van 'n slang.  
             8. Vra: Is die slang net so swaar soos die bal?  
             9. Sê: Merk julle antwoord by 36.
- 22 A.      Apparaat: Een kleibal en 'n glas drie-kwart gevul met water.  
 Metode:    1. Laat sak die bal in die water en merk die watervlak.  
             2. Vestig die aandag van die leerlinge op die watervlak.  
             3. Haal nou die bal uit.  
             4. Druk die bal plat.  
             5. Vra aan die leerlinge: Wat gaan nou met die watervlak gebeur as die plat stuk klei in die glas laat sak word?  
                 Gaan die watervlak net so bly of gaan dit styg? Gaan die watervlak meer (hoër) of minder styg as in die geval van die bal?  
             6. Sê aan die leerlinge: Merk julle antwoord by 37.
- 22 B.      Apparaat: Twee klei balle (blou en geel) en twee identiese glase drie-kwart gevul met water.  
 Metode:    1. Toon die balle aan die leerlinge en beklemtoon dat hulle ewe groot is.  
             2. Vra: Is daar ewe veel klei in die twee balle?

3. Sê: Merk julle antwoord oor een van die blokkies by 38.
4. Vra: Is die twee balle ewe swaar?
5. Sê: Merk julle antwoord oor een van die blokkies by 39.
6. Laat sak die blou bal in een van die glase.  
Merk die watervlak.  
Vra: Wat sal gebeur as die geel bal in die ander glas met water gesit word?
7. Sê: Merk julle antwoord oor een van die blokkies by 40.
8. Druk die geel bal plat.
9. Vra: Wat sal gebeur as die platgedrukte klei in die water gesit word?
10. Sê: Merk julle antwoord by 41.
11. Rol die geel stuk klei weer in die vorm van 'n bal.
12. Toon die twee balle aan die leerlinge.
13. Rol die geel bal in die vorm van 'n slang.
14. Vra: Wat sal gebeur as die slang in die water laat sak word? Gaan dit die water hoër of laer laat styg as die bal of gaan die watervlak dieselfde bly?
15. Sê: Merk julle antwoord by 42.

23. Apparaat: 'n Balansskaal met verskillende gewigte.

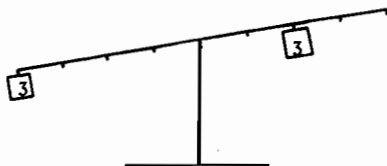
- Metode:
1. Plaas die balans so in die klas dat al die leerlinge dit kan sien.
  2. Dui aan dat die indelings op die arms presies ewe ver van mekaar af is.
  3. Dui aan dat die balans in ewewig is as daar aan beide kante geen gewigte is nie.
  4. Dui aan met twee drie-eenheid-gewigte dat die balans in ewewig is as die gewigte ewe ver van die steunpunt (middelpunt) af is.

Bv.



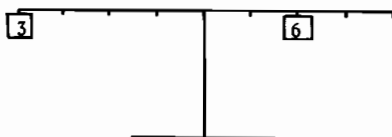
5. Dui aan dat as die linkerkant se gewig in dieselfde posisie bly en die regterkant se gewig inskuif, die linkerkant te swaar is.

Bv.



6. Vervang die gewig aan die regterkant eers met 'n 4 dan met 'n 5 en dan met 'n 6. Met die 6 moet die balans in ewig wees/balanseer.

Bv.



7. Haal die gewigte af.  
8. Plaas 'n 6 aan die linkerkant in die middel van die arm.  
9. Plaas 'n 6 aan die regterkant sodat die balans in ewig is.  
10. Skuif nou die 6 aan die regterkant uit en toon aan dat die regterkant te swaar is.  
11. Vervang nou die 6 aan die regterkant met 'n 5, 'n 4 en dan 'n 3.  
12. Toon aan dat die balans met die 3 weer in ewig is.

Sê aan die leerlinge: Doen die probleme by vraag 43 op die antwoordblad. As julle een probleem nie kan doen nie, los dit en gaan aan met die volgende.

24. Kombinatoriese denke

A. Apparaat: 'n Kaart met drie kleure daarop (blou, geel, rooi).

- Metode:
1. Toon die drie kleure aan die leerlinge.
  2. Sê aan die leerlinge: Vorm op julle antwoordblad by 44 so veel pare met hierdie kleure as wat julle kan. Moenie pare herhaal nie.
  3. Voeg twee kleure (pers, vaal) by en herhaal die opdrag by 2. Wys vir die leerlinge op die swartbord wat hulle moet doen.

B. Apparaat: 'n Kaart met vier kleure daarop (blou, geel, rooi en swart).

- Metode: Sê aan die leerlinge: Vorm op julle antwoordblad by 45 soveel pare en drietalle as wat julle kan, sonder om van die pare of drietalle te herhaal.

C. Apparaat: 'n Kaart met vier figure.

- Metode: Sê aan die leerlinge: Vorm op julle antwoordblad by 46 soveel verskillende kombinasies met hierdie figure as wat julle kan, sonder om kombinasies te herhaal.

25. Sê: Daar is drie seuns, Jacob, Willem en Petrus. Jacob is groter as Petrus. Petrus is kleiner as Willem.

Vra: Wie is die kleinste van die drie seuns?

Sê: Merk julle antwoord by 47.

26. Sê: 'n Pa is drie keer die ouderdom van sy dogter, Maria, en 5 keer die ouderdom van sy seun Piet.

Vra: Wie van Maria of Piet is die oudste?

Sê: Merk julle antwoord by 48.

27. Apparaat: Twee glase van identiese grootte en een glas wat langer en smaller is as die ander twee.

Metode: Maak die twee glase vol water. Sorg dat die water vlak ewe hoog is.

1. Vra: Is daar ewe veel water in die glase?
2. Sê: Merk julle antwoord by 49.
3. Gooi nou die water van die een glas in die lang glas.
4. Vra: Is daar in die lang glas net soveel water as in die ander glas of is daar meer water in of is daar minder water in?
5. Sê: Merk julle antwoord by 50.

DENKVLAKTOETS: VOORTOETS IN TSWANA

1. Karata 1A

Tlhalosetsa barutwana gore dithupana tse pedi tse di a lekana ka boleele.

Supa jaanong karata 1B mme o botse: Ke thupana efe e e leng telele go feta kgotsa di a lekana ka boleele?

Raya barutwana o re: Arabelang mogo nngwe ya diphatlha mo go 1.

2. Karata 2

Botsa barutwana gore: Ke mang fa e le Piet kana Sam yo o moleele go feta kgotsa ba a lekana ka boleele?

Raya barutwana o re: Arabelang mo go nngwe ya diphatlha mo go 2.

3. Karata 3A

Tlhalosetsa barutwana gore dipagamo tse dia lekana ka boleele.

Supa jaanong karata 3B mme o botse: Ke dipagamo di le dingwe.

Ke sepagamo sefe se seleele go feta kgotsa di a lekana ka boleele? E re: Arabelang mo go nngwe ya diphatlha mo go 3.

4. Karata 4A

Botsa barutwana gore: A Dafide le Petoro ba bapile kgotsa ba katogane?

Raya barutwa o re: Arabelang mo go 4.

5. Karata 4B

E re: Jaanong go agilwe lebota magareng ga Dafide le Petoro.

Botsa: A ba sa ntse ba bapile kgotsa ba katogane?

E re: Arabelang mo go 5.

6. Karata 5

E re: Go na le ditsela tse pedi go tswa Ikageng go ya Soweto.  
Botsa: A ditsela tse di a lekana kgotsa e nngwe e teleele go  
feta e nngwe?

E re: Arabelang mo go 6.

7. Karata 6A

Tlhalosetsa barutwana gore Silase le Josefa ke basimane ba  
babedi. Mongwe le mongwe o na le karolonyana ya lefatshe mo  
a ka tshamekelang teng. Tlhalosa gore dikarolonyana tsa lefa-  
tshetsa bone di a lekana ka bogolo.

Botsa: A Silase le Josefa ba na le tulo e e lekanang mo ba ka  
tshamekelang teng?

E re: Arabelang mo go 7.

8. Karata 6B

Supetsa barutwana karata 6B. Ba bolelele gore mo legatsheng  
la mongwe le mongwe go ilwe go agiwa motlaagana, ntlo, kereke  
le benkele.

Ba supetse dikago. Ba tlhalosetse gore matlo a lekana ka  
bogolo, le metlaagana e lekana ka bogolo. Dira fela jalo le  
ka mabenkele le dikereke.

9. Karata 6C

Supetsa barutwana jaanong karata 6C mme o tlhalose gore metlaa=  
gana, matlo, dikereke le mabenkele di feditswe go agiwa.

Botsa jaanong: A Silase le Josefa ba santse ba na le tulo e e  
lekanang mo ba ka tshamekelang teng?

E re: Arabelang mo go 8.

Botsa: Ke mang yo o tulo e ntsi go ka tshamekela teng?

E re: Arabelang mo go 9.

10. Karata 7A

E re: 1. Go na le ditshwantsho tse pedi tse di khutlonne-  
tsepa tse di lekanang ka bogolo.

2. Re ya go tlosa ditshwantsho tse pedi tse di serolane  
mo go se sehibidu mo motsileng o o kwa godimo mme re  
di tsenye mo motsileng o o kwa tlase.

Jaanong supetsa barutswana karata 7B

Botsa: A ditshwantsho tse pedi tse di santse di lekana ka bogolo a kgotsa e nngwe e kgolo mo go e nngwe?

E re: Arabelang mo go 10.

11. Karata 8A

E re: Silase le Josefa ba na le setlhophana sa dikgomo, mongwe le mongwe.

Botsa: A ba na le paloelekanang ya dikgomo kgotsa Silas o na le palo e ntsi ya dikgomo go feta Josefa?

E re: Arabelang mo go 11.

12. Jaanong supa karata 8B

Botsa: A ba sa ntse ba na le palo e e lekanang ya dikgomo kgotsa mongwe o na le dikgomo tse dintsi go feta yo mongwe?

E re: Arabelang mo go 12.

13. Karata 9A

Tlhalosa gore ke setlhophana sa ditalama e bile go na le ditalama tse di pududu le tse di khibidu.

Botsa: A ditalama tse di pududu di dintsi ka palo kgotsa tse di khibidu di dintsi ka palo?

E re: Arabelang mo go 13.

14. Jaanong supa karata 9B

Botsa: A jaanong ditalama tse di pududu di dintsi ka palo kgotsa tse di khibidu di dintsi ka palo?

E re: Arabelang mo go 14.

15. Karata 10

Tlhalosa gore ke setlhophana sa bana e bile go na le basimane le basetsana.

Botsa: A go na le basetsana ba bantsi kgotsa go na le bana ba bantsi?

E re: Arabelang mo go 15.

16. Karata 11

Tlhalosa gore ke setlhopha sa dikhutlonne le setlhopha sa didiko.

- (a) Botsa: A dikhutlonne tsotlhe di dikhibidu?  
E re: Arabelang mo go 16.
- (b) Botsa: A tsotlhe tse di pududu ke didiko?  
E re: Arabelang mo go 17.
- (c) Botsa: A tsotlhe tse di khibidu ke dikhutlonne?  
E re: Arabelang mo go 18.
- (d) Botsa: A didiko tsotlhe di pududu?  
E re: Arabelang mo go 19.

17. Karata 12

Tlhalosetsa barutwana gore e na le karata ya ditshwantsho tsa diphologolo. Supa ditshwantsho mme o bolele gore ke eng, kgotsa o botse gore ke eng.

- (a) Botsa: A go na le dipidipidi tse dintsi go feta dino-nyane?  
E re: Arabelang mo go 20.
- (b) Botsa: A go na le diphologolo tse dintsi go feta dipidipidi?  
E re: Arabelang mo go 21.
- (c) Botsa: A fa dipidipidi tsotlhe mo lefatsheng di ka swa, a go sa ntse go ka nna le dinonyane tse di setseng?  
E re: Arabelang mo go 22.
- (d) Botsa: A fa dinonyane tsotlhe mo lefatsheng di ka swa, a go sa ntse go ka nna le dipidipidi tse di setseng?  
E re: Arabelang mo go 23.
- (e) Botsa: A fa diphologolo tsotlhe mo lefatsheng di ka swa, a go sa ntse go ka nna le dipidipidi tse di setseng?  
E re: Arabelang mo go 24.
- (f) Botsa: A fa dipidipidi tsotlhe mo lefatsheng di ka swa, a go sa ntse go ka nna le diphologolo tse di setseng?  
E re: Arabelang mo go 25.

- (g) Botsa: A fa diphologolo tsotlhe mo lefatsheng di ka swa, a go sa ntse go ka nna le dinonyane tse di setseng?  
E re: Arabelang mo go 26.
- (h) Botsa: A fa dinonyane tsotlhe mo lefatsheng di ka swa, a go sa ntse go ka nna le diphologolo tse di setseng?  
E re: Arabelang mo go 27.

18. Karata 13

Tlhalosa gore go na le metsila ya diphatlha e mebedi e e kopanang felo gongwe. Bolela fa mo motsileng o o kwa godimo go na le hutse (supa); lephutse (supa), lethhare (supa) le kgamelo (supa).  
Bolela fa mo motsileng o mongwe go na le setlhotswana sa dinaledi. Tlhalosa jaanong fa go sa ntse go na le setlhopha sa dikotana ka setshwantsho mo.  
Bolela gore sengwe sa ditshwantsho tse, se lekana mo diphatlheng tse di bulegileng.  
Botse: Ke setshwantsho sefe seo se lekanang le phatlha e e bulegileng?  
E re: Arabelang mo go 28.

19. Karata 14

Botsa: Karabo ya 12 + 6 bokae?  
Barutwana ba tshwanetse go arabela kwa godimo karabo ya 12 + 6.  
Botsa: (Lo se ka lwa arabela kwa godimo) Re tshwanetse go dira jang gore re bone gape 12?  
E re: Arabelang mo go 29.

20A Didirisiwa: kgwele ya letsopa e le yosi (bolo).

- Tsela: 1. Bontsha barutwana kgwele/bolo.  
2. Jaanong pitilelela kgwele.  
3. Botsa barutwana: A lengathwana le le pitileletsweng la letsopa le sa ntse le na le letsopa le le lekanang le le kgwele e neng e na le lona?  
4. Raya barutwana: Arabelang mo go 30.

20B Didirisiwa: Dikgwele tse pedi tsa letsopa. (e pududu le e tshetlha)

- Tsela: 1. Bontsha barutwana dikgwele tse pedi tseo mme o tlhalose gore di a lekana ka bogolo.  
2. Botsa: A kgwele e pududu e na le letsopa le le lekanang le la kgwele e tshetlha?  
3. E re: Arabelang mo go 31.  
4. Jaanong pittelela kgwele e tshetlha. Bontsha barutwana dikgwele tse pedi tseo.  
5. Botsa: A kgwele e pududu e na le letsopa le le lekanang le la kgwele e tshetlha?  
6. E re: Arabelang mo go 32.  
7. Potoka letsopa le le setlha go nna kgwele gape mme o supetse barutwana dikgwele tse pedi tseo.  
8. Potoka kgwele e tshetlha go tshwana le noga e telele.  
9. Botsa: A go na le letsopa le le lekanang le la noga mo kgweleng?  
10. E re: Arabelang mo go 33.

21A Didirisiwa: Kgwele e le yosi le selekanyo

- Tsela: 1. Lekanya bokete jwa kgwele mo selekanyong.  
2. Botsa barutwana gore boima jwa kgwele ke bokae?  
3. Pittelela kgwele jaanong.  
4. Botsa: A lengathwana la letsopa le le pitteleletsweng le tla nna le boima jo bo lekanang le jwa kgwele fa e ne e lekanngwa mo selekanyong?  
5. E re: Arabelang mo go 34.

21B Didirisiwa: Selekanyo le dikgwele tse pedi tsa letsopa (e pududu le e tshetlha.)

- Tsela: 1. Lekanya dikgwele mo selekanyong go lemoga gore di a lekana ka boima kgotsa boima jwa tsone bo a lekana.  
2. Jaanong pittelela kgwele e tshetlha.  
3. Botsa: A mangathwana a mabedi a letsopa a sa ntse a lekana ka boima?  
4. Arabelang mo go 35.  
5. Potoka lengathwana la letsopa le le pitlilweng go nna gape mo popegong ya kgwele.

6. Bontsha barutwana dikgwele tse pedi tseo.
7. Potoka kgwele e tshetlha go tshwana le noga e telele.
8. Botsa: A boima jwa noga bo sa lekana le jwa kgwele?
9. E re: Arabelang mo go 36.

22A Didirisiwa: Kgwele e le yosi ya letsopa le galase e tladitswe tharo-nneng ka metsi.

- Tsela:
1. Leketlhisa kgwele mo metsing mme o tshwaye mothamo wa metsi.
  2. A barutwana ba tlhome kelotlhoko ya bone mo mothamong wa metsi.
  3. Jaanong ntsha kgwele.
  4. Pitlelela kgwele.
  5. Botsa barutwana: Go tla diragalang ka mothamo wa metsi fa lengathwana le le pitleletsweng la letsopa le ka leketlhisiwa mo galaseng? A mothamo wa metsi o dula o sa fetoge kgotsa o tla tlhatlhoga/oketsega? A mothamo wa metsi o tla boa o ntsifala (tlhatlhoga) kgotsa o ngotlega (fokotsega) jaaka mo lebakeng la kgwele?
  6. Raya barutwana: Arabelang mo go 37.

22B Didirisiwa: Dikgwele tse pedi tsa letsopa (e pududu le e tshetlha) le digalase tse pedi tse di tshwanang di tladitswe tharo-nneng ka metsi.

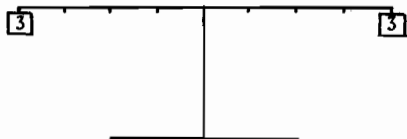
- Tsela:
1. Bontsha barutwana dikgwele mme o tiiseletse gore di lekana ka bogolo.
  2. Botsa: A go na le bontsi jwa letsopa jo bo lekanang mo dikgweleng tse pedi?
  3. E re: Arabelang mo go nngwe ya diphatlha mo go 38.
  4. Botsa: A dikgwele tse pedi tse di lekana ka boima?
  5. E re: Arabelang mo go nngwe ya diphatlha mo go 39.
  6. Botsa: Go tla diragalang fa kgwele e tshetlha e ka tsennngwa mo metsing?
  7. E re: Arabelang mo go nngwe ya diphatlha mo go 40.

8. Pitlelela kgwele e tshetlha.
9. Botsa: Go tla diragalang fa letsopa le le pitle-  
letsweng le ka tsenngwa mo metsing? A le tla  
tlhatlhosetsa mothamo wa metsi kwa godimo kgotsa  
kwa tlase jaaka kgwele, a kgotsa mothamo wa metsi  
o tla dula o sa fetoge?
10. E re: Arabelang mo go 41.
11. Potoka lengathwano la letsopa le le setlha gape  
mo sebopegong sa kgwele.
12. Bontsha barutwana dikgwele tse pedi tseo.
13. Potoka kgwele e tshetlha mo sebopegong sa noga.
14. Botsa: Go diragalang fa noga e ka tsenngwa mo  
metsing? A e tla tlhatlhosetsa mothamo wa metsi  
kwa godimo kgotsa kwa tlase jaaka kgwele, a kgotsa  
mothamo wa metsi o tla dula o sa fetoge?
15. E re: Arabelang mo go 42.

23. Didirisiwa: Selekanyo le makete a a farologaneng.

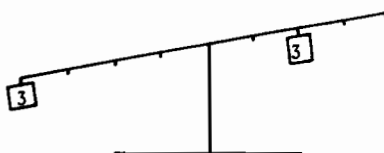
- Tswla:
1. Baa selekanyo mo barutwana botlhe mo phaphosing  
ba ka se bonang sentle.
  2. Ba lemotshe gore bokgala mo matsogong a selekanyo a  
a lekana.
  3. Ba lemotshe gore boima mo matlhakoreng ka bobedi  
a selekanyo boa le kana fa go sena makete ape.
  4. Ba lemotshe ka makete a motso wa boima jwa tharo  
gore matlhakore a selekanyo a lekana ka boima fa  
makete a emetse kgakala ka go lekana.

Sekai:



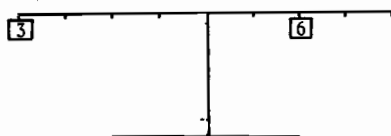
5. Ba lemotshe gore fa lekete le le ka fa molemeng le beilwe mo tulong e le nngwe mme le le kafa mojang le atameditswe kafa gare, letlhakore la molema le botlhofo.

Sekai:



6. Pega lekete la motso wa 4 kafa mojang, pega la 5 gape o boe pege la 6. Ka lekete la motso wa 6 selekanyo se tshwanetse se a bo se lekana ka boima.

Sekai:



7. Tlosa makete mo selekanyong.
8. Pega lekete la 6 kafa molemeng mo bogareng jwa letsogo.
9. Pega lekete la 6 kafa mojang gore matsogo a selekanyo a lekane ka boima.
10. Jaanong suthisa 6 kafa mojang mme o bontshe gore letlhakore la moja le boima.
11. Pega 5 mo boemong jwa 6 kafa mojang, morago o pege 4 le 3.
12. Bontsha gore jaanong selekanyo se a lekana ka boima fa go pegilwe 3.

Raya barutwana o re: Arabelang potso e mo go 43 mo lokwalong la dikarabo. Fa lo sa kgone go araba potso e le yosi, e tlogele mme o tswelale ka e e latelang.

24. Dikgopolo tse di tswakantsweng.

A. Didirisiwa: Karata e e nang le mebala e meraro (pududu, tshetlha, khibidu)

- Tsela: 1. Bontsha barutwana mebala e meraro eo.  
2. Raya barutwana o re: Bopang mo dikwalo-karabelong tsa lona mo go 44 ditshwantsho sebedi ka moo le ka kgonang ka mebala e. O se ka wa boeletsa ditshwantsho-sebedi. (Kaela barutwana mo tlapantshong se ba tshwa- netseng go se dira).  
3. Oketsa ka mebala e mebedi, serolane le thokwa, mme o ba laele jaaka fa go 2.

B. Didirisiwa: Karata e e na leng mebala e mene (pududu, tshetlha, khibidu, ntsho).

Tsela: Raya barutwana o re: Bopang mo dikwalo-karabelong tsa lona mo go 45 ditshwantsho-sebedi le ditshwantsho-seraro ka moo le ka kgonang, kwa ntle ga go boeletsa ditshwantsho-sebedi le ditshwantsho-seraro.

C. Didirisiwa: Karata ka matshwaq a mane:

Tsela: Raya barutwana o re: Bopang mo dikwalo-karabelong tsa lona mo go 46 ditshwantsho tse di farologaneng di tswakantswe ka moo le ka kgonang, kwa ntle ga go boeletsa ditshwantsho tse di tswakantsweng tse.

25. E re: Go na le basimane ba bararo, Jakoba, Wellem le Petoro. Jakoba o mogolo mo go Petoro. Petoro o monnye mo go Wellem.

Botsa: Ke mang yo monnye mo basimaneng ba bararo ba?

E re: Arabelang mo go 47.

26. E re: Monna o mogolo gararo ka tsalo mo go morwadie, Maria, gape ga 5 mogolo ka tsalo mo go morwae Piet.

Botsa: Ke mang mo go Maria kgotsa Piet yo mogolo ka tsalo?

E re: Arabelang mo go 48,

27. Didiriswa: Digalase tse pedi (2) tse di tshwanang ka selekano le e le nngwe(1) e telele, e tshesane go feta tse dingwe tse pedi.

Tsela: Tlatsa digalase tse pedi ka metsi. Tlhokomela gore bogodimo jwa metsi bo a lekana ka bogodimo.

1. Botsa: A metsi a lekana mo digalaseng?
2. E re: Tshwaang dikarabo mo go 49.
3. Jaanong tshela metsi a galase e nngwe mo galaseng e telele.
4. Botsa: A go na le metsi mo galaseng e telele a a lekanang le metsi a a mo digalaseng tse dingwe kgotsa go na le metsi a mantsi kgotsa a manyennyane?
5. E re: Tshwaang dikarabo tsa lona mo go 50.

## DENKVLAKTOETS: VOORTOETS:

Antwoordblad in Afrikaans

Antwoordblad in Tswana

Naam: .....

Leina: .....

Skool: .....

Sekolo: .....

1. A is die langste  
B is die langste  
Hulle is ewe lank  
Ek weet nie


1. A e telele go feta  
B e telele go feta  
Di lekana ka boleele  
Ga ke itse

2. Sam is die langste  
Piet is die langste  
Hulle ie ewe lank  
Ek weet nie


2. Sam o moleele go feta  
Piet o moleele go feta  
Ba lekana ka boleele  
Ga ke itse

3. A is die langste  
B is die langste  
Hulle is ewe lank  
Ek weet nie


3. A ke se seleele go feta  
B ke se seleele go feta  
Di lekana ka boleele  
Ga ke itse

4. Hulle is naby mekaar  
Hulle is ver van mekaar af  
Ek weet nie


4. Ba bapile  
Ba katogane  
Ga ke itse

5. Hulle is nog naby mekaar  
Hulle is ver van mekaar af  
Ek weet nie


5. Ba sa ntse ba bapile  
Ba sa ntse ba katogane  
Ga ke itse

6. Die paaie is ewe lank  
A is die langste  
B is die langste  
Ek weet nie


6. Ditsela di lekana ka boleele  
A e telele go feta  
B e telele go feta  
Ga ke itse

- |                                                                                                                                     |                                                                                                              |                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>7. Ja, hulle het ewe veel plek<br/>Nee, hulle het nie ewe veel<br/>plek nie<br/>Ek weet nie</p>                                  | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                             | <p>7. Ee, ba na le tulo e e lekanang<br/>Nnyaa, ga ba na tulo e e<br/>lekanang<br/>Ga ke itse</p>                                                                                           |
| <p>8. Ja, hulle het ewe veel plek<br/>Nee, hulle het nie ewe veel<br/>plek nie<br/>Ek weet nie</p>                                  | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                             | <p>8. Ee, ba na le tulo e e lekanang<br/>Nnyaa, ga ba na tulo e e<br/>lekanang<br/>Ga ke itse</p>                                                                                           |
| <p>9. Silas het die meeste plek<br/>Josef het die meeste plek<br/>Ek weet nie</p>                                                   | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                             | <p>9. Silase o na le tulo e ntsi<br/>Josefa o na le tulo e ntsi<br/>Ga ke itse</p>                                                                                                          |
| <p>10. Ja, hulle is nog ewe groot<br/><br/>Nee, hulle is nie meer ewe<br/>groot nie<br/>Ek weet nie</p>                             | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                             | <p>10. Ee, di sa ntse di lekana ka<br/>Bogolo<br/>Nnyaa, ga di sa lekana ka<br/>bogolo<br/>Ga ke itse</p>                                                                                   |
| <p>11. Ja, hulle het ewe veel<br/>beeste<br/>Nee, hulle het nie ewe<br/>veel beeste nie<br/>Ek weet nie</p>                         | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                             | <p>11. Ee, ba na le palo e e leka-<br/>nang ya dikgomo<br/>Nnyaa, ga ba na palo e e le-<br/>kanang ya dikgomo<br/>Ga ke itse</p>                                                            |
| <p>12. Ja, hulle het nog ewe veel<br/>beeste<br/>Nee, Silas het meer beeste<br/><br/>Nee, Josef het meer beeste<br/>Ek weet nie</p> | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/> | <p>12. Ee, ba sa ntse ba na le palo<br/>e e lekanang ya dikgomo<br/>Nnyaa, Silase o na le palo e<br/>ntsi ya dikgomo<br/>Nnyaa, Josefa o nale palo e<br/>ntsi ya dikgomo<br/>Ga ke itse</p> |
| <p>13. Daar is meer knope<br/><br/>Daar is meer blou knope<br/>Ek weet nie</p>                                                      | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                             | <p>13. Ditalama tse dikhibidu di<br/>dintsi ka palo<br/>Ditalamatse di pududu di<br/>dintsi ka palo<br/>Ga ke itse</p>                                                                      |

- |                                                                                   |                                                                                  |                                                                                                                 |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <p>14. Daar is meer knope<br/>Daar is meer blou knope<br/>Ek weet nie</p>         | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/> | <p>14. Ditalama tse dikhibidu di dintsi ka palo<br/>Ditalama tse di pududu di dintsi ka palo<br/>Ga ke itse</p> |
| <p>15. Daar is meer meisies<br/>Daar is meer kinders<br/>Ek weet nie</p>          | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/> | <p>15. Go na le basetsana ba bantsi<br/>Go na le barutwana ba bantsi<br/>Ga ke itse</p>                         |
| <p>16. Ja, al die vierkante is rooi<br/>Nee, al die vierkante is nie rooi nie</p> | <input type="checkbox"/><br><input type="checkbox"/>                             | <p>16. Ee, dikhutlo-nne tsotlhe di dikhibidu<br/>Nnyaa, dikhutlo-nne tsotlhe ga di dikhibidu</p>                |
| <p>17. Ja, almal is sirkels<br/>Nee, almal is nie sirkels nie</p>                 | <input type="checkbox"/><br><input type="checkbox"/>                             | <p>17. Ee, tsotlhe ke didiko<br/>Nnyaa, tsotlhe ga se didiko</p>                                                |
| <p>18. Ja, almal is vierkante<br/>Nee, almal is nie vierkante nie</p>             | <input type="checkbox"/><br><input type="checkbox"/>                             | <p>18. Ee, tsotlhe ke dikhutlo-nne<br/>Nnyaa, tsotlhe ga se dikhutlo-nne</p>                                    |
| <p>19. Ja, almal is blou<br/>Nee, almal is nie blou nie</p>                       | <input type="checkbox"/><br><input type="checkbox"/>                             | <p>19. Ee, tsotlhe di dipududu<br/>Nnyaa, tsotlhe ga di dipududu</p>                                            |
| <p>20. Ja<br/>Nee<br/>Ek weet nie</p>                                             | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/> | <p>20. Ee<br/>Nnyaa<br/>Ga ke itse</p>                                                                          |
| <p>21. Ja<br/>Nee<br/>Ek weet nie</p>                                             | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/> | <p>21. Ee<br/>Nnyaa<br/>Ga ke itse</p>                                                                          |
| <p>22. Ja<br/>Nee<br/>Ek weet nie</p>                                             | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/> | <p>22. Ee<br/>Nnyaa<br/>Ga ke itse</p>                                                                          |



30. Ja  
Nee  
Ek weet nie

30. Ee  
Nnyaa  
Ga ke itse

31. Ja  
Nee  
'n Mens kan nie sê nie

31. Ee  
Nnyaa  
Motho a ka se rurefatse

32. Ja  
Nee  
'n Mens kan nie sê nie

32. Ee  
Nnyaa  
Motho a ka se rurefatse

33. Ja  
Nee  
'n Mens kan nie sê nie

33. Ee  
Nnyaa  
Motho a ka se rurefatse

34. Ja  
Nee  
'n Mens kan nie sê nie

34. Ee  
Nnyaa  
Motho a ka se rurefatse

35. Ja  
Nee  
'n Mens kan nie sê nie

35. Ee  
Nnyaa  
Motho a ka se rurefatse

36. Ja  
Nee  
'n Mens kan nie sê nie

36. Ee  
Nnyaa  
Motho a ka se rurefatse

37. Ja, dit gaan hoër styg  
  
Nee, dit gaan nie hoër styg nie  
Dit gaan tot dieselfde hoogte styg  
'n Mens kan nie sê nie

37. Ee, a tla tlhatlhogela kwa godimo  
Nnyaa, a ka se tlhatlhogele kwa godimo  
A tla tlhatlhogela go lekana.  
Motho a ka se rurefatse

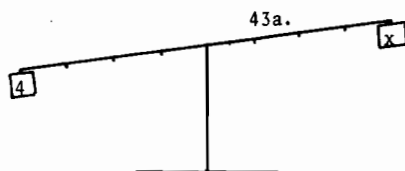
38. Ja  
Nee  
'n Mens kan nie sê nie

38. Ee  
Nnyaa  
Motho a ka se rurefatse

39. Ja  
Nee  
'n Mens kan nie sê nie
39. Ee  
Nnyaa  
Motho a ka se rurefatse
40. Ja  
Nee  
'n Mens kan nie sê nie
40. Ee  
Nnyaa  
Motho a ka se rurefatse
41. Die watervlak gaan hoër wees  
Die watervlak gaan laer wees  
Die watervlak gaan dieselfde wees  
'n Mens kan nie sê nie
41. Mothamo wa metsi o tla nna kwa godimo  
Mothamo wa metsi o tla nna kwa tlase  
Mothamo wa metsi o tla nna o sa fetoge  
Motho a ka se rurefatse
42. Die watervlak gaan hoër wees  
Die watervlak gaan laer wees  
Die watervlak gaan dieselfde wees  
'n Mens kan nie sê nie
42. Mothamo wa metsi o tla nna kwa godimo  
Mothamo wa metsi o tla nna kwa tlase  
Mothamo wa metsi o tla nna o sa fetoge  
Motho a ka se rurefatse

43a.



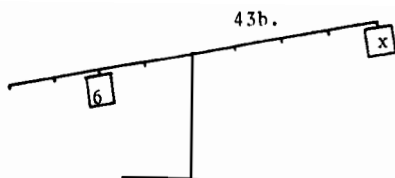
Watter gewig moet by X geplaas word om die skaal te balanseer? Maak 'n kruisie oor die gewig wat jy sal gebruik.

2	4	6	8	10
---	---	---	---	----

Ke boima bofe jo bo tshwanetseng go pegiwa gore matlhakoro a selekanyo a le-kane ka boima? Tshwaya boima jo o ka bo dirisang ka sefa-pano.

2	4	6	8	10
---	---	---	---	----

43b.



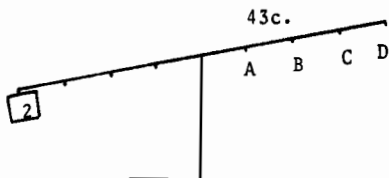
Watter gewig moet by X geplaas word om die skaal te balanseer? Maak 'n kruisie oor die gewig wat jy sal gebruik.

3	6	9	12	15	18
---	---	---	----	----	----

Ke boima bofe jo bo tshwa- netseng go pegiwa mo go X gore matlhakore a selekanyo a lekane ka boima? Tshwaya boi- ma jo o ka bo dirisang ka se- fapano.

3	6	9	12	15	18
---	---	---	----	----	----

43c.



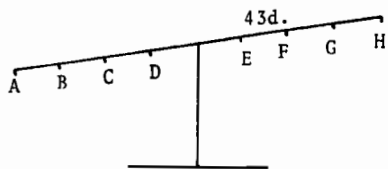
Waar moet 'n 4 kg-gewig ge- plaas word om die skaal te balanseer?

A	B	C	D
---	---	---	---

Boima jwa 4kg bo tshwanetse go pegiwa fa kae gore matlha- kore a selekanyo a lekane ka boima?

A	B	C	D
---	---	---	---

43d.



Jy het twee gewigte, een van 5kg en een van 10kg. Waar aan die linkerkant sal jy die 5-kg-gewig plaas en waar

O na le makete a mabedi, bongwe ke jwa 5kg fa jo bongwe e le jwa 10kg. Ke fa kae kafa molemeng mo o tla

aan die regterkant sal jy die 10 kg-gewig plaas om die skaal te balanseer? Ek sal die 5 kg-gewig plaas by 

A	B	C	D
---	---	---	---

 en ek sal die 10-kg-gewig plaas by 

E	F	G	H
---	---	---	---

 Rede vir my antwoord .....

pegang boima jwa 5kg e bile ke fa kae kafa mojeng mo o tla pegang boima jwa 10kg go: matlhakore a selekanyo a le= kane ka boima? Ke tla pega boima jwa 5kg mo go 

A	B	C	D
---	---	---	---

 e bile ke tla pega boima jwa 10kg mo go 

E	F	G	H
---	---	---	---

 Aneela ka mabaka mo karabong ya gago .....

44. ....  
 .....  
 .....  
 45. ....  
 .....  
 .....  
 .....  
 46. ....  
 .....  
 .....

44. ....  
 .....  
 .....  
 45. ....  
 .....  
 .....  
 .....  
 46. ....  
 .....  
 .....

47. Jacob  
 Willem  
 Petrus  
 'n Mens kan nie sê nie


47. Jakoba  
 Wellem  
 Peforo  
 Motho a ka se rurefatse

48. Maria is die oudste  
 Piet is die oudste  
 'n Mens kan nie sê nie


48. Maria ke yo mogolo ka tsalo  
 Piet ke yo mogolo ka tsalo  
 Motho a ka se rurefatse

49. Ja  
 50. Nee  
 'n Mens kan nie sê nie

49

50

49. Ee  
 50. Nnyaa  
 Motho a ka se rurefatse

DENKVLAKTOETS IN AFRIKAANS

1. Kaart 1A

Verduidelik aan die leerlinge dat die twee stokkies ewe lank is.  
Wys nou kaart 1B en vra: Watter stokkie is nou die langste of is hulle ewe lank?

Sê aan die leerlinge: Merk julle antwoord in een van die blokkies by 1.

2. Kaart 2

Vra aan die leerlinge: Wie van Piet of Sam is die langste of is hulle ewe lank?

Sê aan die leerlinge: Merk julle antwoord in een van die blokkies by 2.

3. Kaart 3A

Verduidelik aan die leerlinge dat die lere ewe lank is.

Wys nou kaart 3B en vra: Dit is dieselfde lere. Watter leer is nou die langste of is hulle ewe lank?

Sê: Merk julle antwoord in een van die blokkies by 3.

4. Kaart 4A

Vra aan die leerlinge: Is Dawid en Petrus naby mekaar of is hulle ver van mekaar af?

Sê aan die leerlinge: Merk julle antwoord by 4.

5. Kaart 4B

Sê: Daar is nou 'n muur gebou tussen Dawid en Petrus.

Vra: Is hulle nog naby mekaar of is hulle ver van mekaar af?

Sê: Merk julle antwoord by 5.

6. Kaart 5

Sê: Daar is twee paaie van Ikageng na Soweto.

Vra: Is die paaie ewe lank of is die een langer as die ander?

Sê: Merk julle antwoord by 6.

7. Kaart 6A

Verduidelik aan die leerlinge dat Silas en Josef twee seuns is. Elkeen het 'n stuk grond waar hy kan speel. Verduidelik dat hulle grond ewe groot is.

Vra: Het Silas en Josef ewe veel plek om te speel?

Sê: Merk julle antwoord by 7.

8. Kaart 6B

Wys kaart 6B aan die leerlinge. Vertel aan hulle dat daar op elkeen se grond 'n hut, 'n huis, 'n kerk en 'n winkel gebou gaan word. Wys na die geboue. Verduidelik dat die huise ewe groot is en dat die hutte ewe groot is. Doen dieselfde met die winkels en die kerk.

9. Kaart 6C

Wys nou kaart 6C aan die leerlinge en verduidelik dat die hutte, huise, kerke en winkels nou klaar gebou is.

Vra nou: Het Silas en Josef nog ewe veel plek om te speel?

Sê: Merk julle antwoord by 8.

Vra: Wie het die meeste plek om te speel?

Sê: Merk julle antwoord by 9.

10. Kaart 7A

Sê: 1. Hier is twee reghoekige figure wat ewe groot is.

2. Ons gaan van die rooi figuur die twee pienk blokke in die boonste ry wegneem en in die onderste ry sit.

Wys nou kaart 7B.

Vra: Is die twee figure nog ewe groot of is die een groter as die ander?

Sê: Merk julle antwoord by 10.

11. Kaart 8A

Sê: Silas en Josef het elkeen 'n klomp beeste.

Vra: Wie het die meeste beeste of het hulle ewe veel beeste?

Sê: Merk julle antwoord by 11.

12. Wys nou kaart 8B

Vra: Wie het nou die meeste beeste of het hulle ewe veel beeste?

Sê: Merk julle antwoord by 12.

13. Kaart 9

Verduidelik dat dit 'n aantal kinders is en dat daar seuns en meisies is.

Vra: Is daar meer meisies of is daar meer kinders?

Sê: Merk julle antwoord by 13.

14. Kaart 10

Wys kaart 10 aan die leerlinge.

Sê: Hier is 'n kaart met 'n klomp diere.

Vra: Watter soort diere is dit? Laat die leerlinge hardop antwoord.

Vra: Wat is die kleure van die diere? Maak seker dat die leerlinge weet dat dit beeste is en dat daar rooi koeie en swart koeie is en dat daar rooi bulle en swart bulle is.

Vra nou die volgende vrae aan die leerlinge:

(a) Is daar meer bulle of is daar meer beeste?

Sê: Merk julle antwoord by 14.

(b) Vra: Is daar meer beeste of is daar meer koeie?

Sê: Merk julle antwoord by 15.

(c) Vra: As al die swart koeie vrek, sal daar dan nog koeie oorbly?

Sê: Merk julle antwoord by 16.

(d) Vra: As al die koeie vrek, sal daar dan nog beeste oorbly?

Sê: Merk julle antwoord by 17.

(e) Vra: As al die beeste vrek, sal daar dan nog koeie oorbly?

Sê: Merk julle antwoord by 18.

(f) Vra: As al die rooi bulle vrek, sal daar dan nog bulle oorbly?

Sê: Merk julle antwoord by 19.

(g) Vra: As al die bulle vrek sal daar dan nog koeie oorbly?

Sê: Merk julle antwoord by 20.

(h) Vra: As al die beeste vrek, sal daar dan nog bulle oorbly?

Sê: Merk julle antwoord by 21.

15. Kaart 11

Verduidelik dat daar twee rye blokkies is wat mekaar ontmoet. Sê dat daar in die boonste ry 'n hoed (wys), 'n pampoens (wys), 'n blaas (wys) en 'n emmer (wys) is. Sê dat daar in die ander ry 'n aantal sterre is. Verduidelik nou dat daar nog 'n klomp blokkies is met 'n voorwerp in elke blokkie. Sê dat een van hierdie voorwerpe in die oop blokkie pas.

Vra: Watter voorwerp pas in die oop blokkie?

Sê: Merk die voorwerp by 22.

16. Kaart 12

Vra: Hoeveel is  $12 + 6$ ?

Die leerlinge moet hardop sê hoeveel  $12 + 6$  is.

Vra: (Nou moet julle nie weer hardop antwoord nie). Wat moet ons doen om weer 12 te kry?

Sê: Merk julle antwoord by 23.

17A. Apparaat: Een kleibal.

Metode: 1. Toon die bal aan die leerlinge.

2. Druk die bal nou plat.

3. Vra aan die leerlinge: Het die plat stuk klei net soveel klei as wat die bal gehad het?

4. Sê aan die leerlinge: Merk julle antwoord by 24.

17B. Apparaat: Twee klei balle (blou en geel).

Metode: 1. Toon die twee balle aan die leerlinge en verduidelik dat die twee balle ewe groot is.

2. Vra: Is daar in die blou bal net soveel klei as in die geel bal?

3. Sê: Merk julle antwoord by 25.

4. Druk nou die geel bal plat. Wys die twee balle vir die leerlinge.

5. Vra: Is daar in die blou bal net soveel klei as in die geel bal?

6. Sê: Merk julle antwoord by 26.

7. Rol die geel stuk klei weer in die vorm van 'n bal en wys die twee balle aan die leerlinge.

8. Rol nou die geel bal in 'n lang slang.

9. Vra: Is daar in die slang net soveel klei as in die bal?
10. Sê: Merk julle antwoord by 27.

18A. Apparaat: Een kleibal en 'n skaal.

- Metode:
1. Weeg die bal op die skaal
  2. Vra: Hoeweel weeg die bal?
  3. Druk nou die bal plat.
  4. Vra: Sal die plat stuk klei net soveel weeg as wat die bal geweeg het?
  5. Sê: Merk julle antwoord by 28.

18B. Apparaat: 'n Skaal en twee kleiballe (blou en geel).

- Metode:
1. Weeg die balle op die skaal om aan te toon dat hulle ewe swaar is of ewe veel weeg.
  2. Druk nou die geel bal plat.
  3. Vra: Is die twee stukke klei nog ewe swaar?
  4. Sê: Merk julle antwoord by 29.
  5. Rol die plat stuk klei nou weer in die vorm van 'n bal.
  6. Wys die twee balle aan die leerlinge.
  7. Rol nou die geel bal in die vorm van 'n slang.
  8. Vra: Is die slang net so swaar soos die bal?
  9. Sê: Merk julle antwoord by 30.

19A. Apparaat: Een kleibal en 'n glas drie-kwart gevul met water.

- Metode:
1. Laat sak die bal in die water en merk die watervlak.
  2. Vestig die aandag van die leerlinge op die watervlak.
  3. Haal nou die bal uit.
  4. Druk die bal plat.
  5. Vra aan die leerlinge: Wat gaan nou met die watervlak gebeur as die plat stuk klei in die glas laat sak word? Gaan die watervlak net so bly of gaan dit styg? Gaan die watervlak meer (hoër) of minder styg as in die geval van die bal?
  6. Sê aan die leerlinge: Merk julle antwoord by 31.

19B. Apparaat: Twee klei balle (blou en geel) en twee identiese glase drie-kwart gevul met water.

- Metode:
1. Toon die balle aan die leerlinge en beklemtoon dat hulle ewe groot is.
  2. Vra: Is daar ewe veel klei in die twee balle?
  3. Sê: Merk julle antwoord oor een van die blokkies by 32.
  4. Vra: Is die twee balle ewe swaar?
  5. Sê: Merk julle antwoord oor een van die blokkies by 33.
  6. Laat sak die blou bal in een van die glase. Merk die watervlak.
  7. Vra: Wat sal gebeur as die geel bal in die ander glas met water gesit word? (Moenie die geel bal in die water sit nie).
  8. Sê: Merk julle antwoord oor een van die blokkies by 34.
  9. Druk die geel bal plat.
  10. Vra: Wat sal gebeur as die platgedrukte klei in die water gesit word? Gaan dit die water hoër of laer laat styg as die bal of gaan die watervlak dieselfde bly?
  11. Sê: Merk julle antwoord by 35.
  12. Rol die geel stuk klei weer in die vorm van 'n bal.
  13. Toon die twee balle aan die leerlinge.
  14. Rol die geel bal in die vorm van 'n slang.
  15. Vra: Wat sal gebeur as die slang in die water laat sak word? Gaan dit die water hoër of laer laat styg as die bal of gaan die watervlak dieselfde bly?
  16. Sê: Merk julle antwoord by 36.

20. Apparaat: Twee glase van identiese grootte en een glas wat langer en smaller is as die ander twee.

Metode: Maak die twee glase vol water. Sorg dat die watervlakke ewe hoog is.

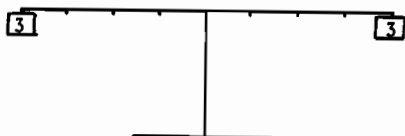
1. Vra: Is daar ewe veel water in die glase?
2. Sê: Merk julle antwoord by 37.

3. Gooi nou die water van die een glas in die lang glas.
4. Vra: Is daar in die lang glas net soveel water as in die ander glas of is daar meer water in of is daar minder water in?
5. Sê: Merk julle antwoord by 38.

21. Apparaat: 'n Balansskaal met verskillende gewigte.

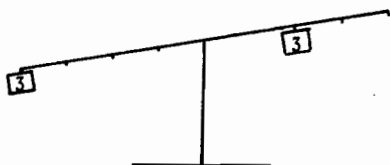
- Metode:
1. Plaas die balans so in die klas dat al die leerlinge dit kan sien.
  2. Dui aan dat die indelings op die arms presies ewe ver van mekaar af is.
  3. Dui aan dat die balans in ewewig is as daar aan beide kante geen gewigte is nie.
  4. Dui aan met twee 3 eenheid gewigte dat die balans in ewewig is as die gewigte ewe ver van die steunpunt (middelpunt) af is.

Bv.



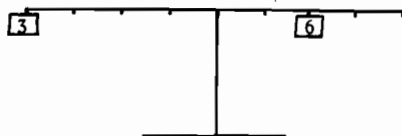
5. Dui aan dat as die linkerkant se gewig in dieselfde posisie bly en die regterkant se gewig inskuif, die linkerkant te swaar is.

Bv.



6. Vervang die gewig aan die regterkant eers met 'n 4 dan met 'n 5 en dan met 'n 6. Met die 6 moet die balans in ewewig wees/balanseer.

Bv.



7. Haal die gewigte af.  
8. Plaas 'n 6 aan die linkerkant in die middel van die arm.  
9. Plaas 'n 6 aan die regterkant sodat die balans in ewewig is.  
10. Skuif nou die 6 aan die regterkant uit en toon aan dat die regterkant te swaar is.  
11. Vervang nou die 6 aan die regterkant met 'n 5, 'n 4 en dan 'n 3.  
12. Toon aan dat die balans met die 3 weer in ewewig is.

Sê aan die leerlinge: Doen die probleme by vraag 39 op die antwoordblad. As julle een probleem nie kan doen nie, los dit en gaan aan met die volgende.

22. Sê: Daar is drie seuns, Jacob, Willem en Petrus. Jacob is groter as Petrus. Petrus is kleiner as Willem.  
Vra: Wie is die kleinste van die drie seuns?  
Sê: Merk julle antwoord by 40.
23. Sê: 'n Pa is drie keer die ouderdom van sy dogter, Maria, en 5 keer die ouderdom van sy seun Piet.  
Vra: Wie van Maria of Piet is die oudste?  
Sê: Merk julle antwoord by 41.

DENKVLAKTOETS IN TSWANA

1. Karata 1A

Tlhalosetsa barutwana gore dithupana tse pedi tse di a lekana ka boleele.

Supa jaanong karata 1B mme o botse: Ke thupana efe e e leng telele go feta, khotso di a lekana ka boleele?

Raya barutwana o re: Arabelang mo go nngwe ya diphatla mo go 1.

2. Karata 2

Botsa barutwana gore: Ke mang fa e le Piet kana Sam yo o moleele go feta kgotsa ba a lekana ka boleele?

Raya barutwana o re: Arabelang mo go nngwe ya diphatlha mo go 2.

3. Karata 3A

Tlhalosetsa barutwana gore dipagamo tse di a lekana ka boleele.

Supa jaanong karata 3B mme o botse: Ke dipagamo di le dingwe. Ke sepagamo sefe se seleele go feta kgotsa di a lekana ka boleele?

E re: Arabelang mo go nngwe ya diphatlha mo go 3.

4. Karata 4A

Botsa barutwana gore: A Dafide le Petoro ba bapile kgotsa ba katogane?

Raya barutwana o re: Arabelang mo go 4.

5. Karata 4B

E re: Jaanong go agilwe lebota magareng ga Dafide le Petoro.

Botsa: A ba sa ntse ba bapile kgotsa ba katogane?

E re: Arabelang mo go 5.

6. Karata 5

E re: Go na le ditsela tse pedi go tswa Ikageng go ya Soweto.

Botsa: A ditsela tse di a lekana kgotsa e nngwe e teleele go feta e nngwe?

E re: Arabelang mo go 6.

7. Karata 6A

Tlhalosetsa barutwana gore Silase le Josefa ke basimane ba babedi. Mongwe le mongwe o na le karolonyana ya lefatshe mo a ka tshamekelang teng. Tlhalosa gore dikarolonyana tsa lefatshe tsa bone di a lekana ka bogolo.

Botsa: A Silase le Josefa ba na le tulo e e lekanang mo ba ka tshamekelang teng?

E re: Arabelang mo go 7.

8. Karata 6B

Supetsa barutwana karata 6B. Ba bolelele gore mo legatsheng la mongwe le mongwe go ilwe go agiwa motlaagana, ntlo, kereke le benkele. Ba supetse dikago. Ba tlhalosetse gore matlo a lekana ka bogolo, le metlaagana e lekana ka bogolo. Dira fela jalo le ka mabenkele le dikereke.

9. Karata 6C

Supetsa barutwana jaanong karata 6C mme o tlhalose gore metlaagana, matlo, dikereke le mabenkele di feditswe go agiwa.

Botsa jaanong: A Silase le Josefa ba santse ba na le tulo e e lekanang mo ba ka tshamekelang teng?

E re: Arabelang mo go 8.

Botsa: Ke mang ya o na leng tulo e ntsi go ka tshamekela teng?

E re: Arabelang mo go 9.

10. Karata 7A

E re: 1. Go na le ditshwantsho tse pedi tse di khutlonne-tsepa tse di lekanang ka bogolo.

2. Re ya go tlosa ditshwantsho tse pedi tse di serolane mo go se sehibidu mo motsileng o o kwa godimo mme re di tsenye mo motsileng o o kwa tlase.

Jaanong supetsa barutwana karata 7B.

Botsa: A ditshwantsho tse pedi tse di santse di lekana ka bogolo a kgotsa e nngwe e kgolo mo go e nngwe?

E re: Arabelang mo go 10.

11. Karata 8A

E re: Silase le Josefa ba na le setlhopha se sentsi sa dikgomo ba le esi.

Botsa: Ke mang yo o nang le dikgomo tse dintsi kgotsa ba na le kkgomo tse di lekanang ka bontsi?

E re: Arabelang mo go 11.

12. Karata 8B

Jaanong supa karata 8B

Botsa: Jaanong ke mang yo o nnang le dikgomo tse dintsi kgotsa a ba na le dikgomo tse dintsi ka golekana?

E re: Arabelang mo go 12.

13. Karata 9

Tlhalosa gore ke setlhopha sa bana e bile go na le basimane le basetsana.

Botsa: A go na le basetsana ba bantsi kgotsa go na le bana ba bantsi?

E re: Arabelang mo go 13.

14. Karata 10

Bontsha barutwana karata 10.

E re: Karata ena, e na le setlhopa sa diphologolo.

Botsa: Ke diphologolo dife? A barutwana ba arabele.

Botsa: Mmala wa diphologolo o ntse jang?

Tlhomamisa gore barutwana ba itse gore ke dikgomo le gone gore go na le dikgomogadi tse Khonwana le kgomogadi tse tshwana le gona go le dipoo tse di khonou le tse di ntsho.

Botsa barutwana dipotso tse di latelang:

(a) Botsa: A go na le dipoo tse dintsi kgotsa gona le dikgomo tse dintsi?

E re: Arabelang mo go 14.

(b) Botsa: A go na le dikgomo tse dintsi kgotsa go na le dikgomogadi tse dintsi?

E re: Arabelang mo go 15.

(c) Botsa: Fa dikgomo tsotlhe tse dintsho di swa, a na go santse go tlaa nna le dikgomogadi tse di setseng?

E re: Arabelang mo go 16.

- (d) Botsa: Fa dikgomogadi tsotlhe di swa, a na go santse go tla nna le dikgomo tse di setseng?  
E re: Arabelang mo go 17.
- (e) Botsa: Fa dikgomo tsotlhe di swa, a go santse go tlaa nna le dikgomogadi tse di setseng?  
E re: Arabelang mo go 18.
- (f) Botsa: Fa go swa dipoo tsotlhe tse dikhonou, a go santse go tlaa sala dipoo?  
E re: Arabelang mo go 19.
- (g) Botsa: Fa dipoo go swa dipoo tsotlhe, a go santse go tlaa sala dikgomogadi?  
E re: Arabelang mo go 20.
- (h) Botsa: Fa dikgomo tsotlhe di swa, a go santse go tlaa nna le dipoo tse di setseng?  
E re: Arabelang mo go 21.

15. Karata 11

Tlhalosa gore go na le metsila ya diphatlha e mebedi e e kopanang felo gongwe. Bolela fa mo motsileng o o kwa godimo go na le hutse (supa), lephutse (supa), letlhare (supa) le kgameo (supa). Bolela fa mo motsileng o mongwe go na le setlhotswana sa dinaledi. Tlhalosa jaanong fa go sa ntse go na le setlhopho sa dikotana ka setshwantsho mo.

Bolela gore sengwe sa ditshwantsho tse se lekana mo diphatlheng tse di bulegileng.

Botsa: Ke setshwantsho sefe seo se lekanang le phatlha e e bulegileng?

E re: Arabelang mo go 22.

16. Karata 12

Botsa: Karabo ya  $12 + 6$  ke bokae?

Barutwana ba tshwanetse go arabela kwa godimo karabo ya  $12 + 6$ .

Botsa: (lo se ka lwa arabela kwa godimo) Re tshwanetse go dira jang gore re bone gape  $12$ ?

E re: Arabelang mo go 23.

- 17A. Didirisiwa: Kgwele ya letsopa e le yosi (bolo)
- Tsela: 1. Bontsha barutwana kgwele/bolo
2. Jaanong pitlelela kgwele
3. Botsa barutwana: A lengathwana le le pitleletsweng la letsopa le sa ntse le na le letsopa le le leka- nang le le kgwele e neng e na le lona?
4. Raya barutwana: Arabelang mo go 24.
- 17B. Didirisiwa: Dikgwele tse pedi tsa letsopa. (E pududu le e tshetlha).
- Tsela: 1. Bontsha barutwana dikgwele tse pedi tseo mme o tlhalose gore di a lekana ka bogolo.
2. Botsa: A kgwele e pududu e na le letsopa le le lekanang le la kgwele e tshetlha?
3. E re: Arabelang mo go 25.
4. Jaanong pitlelela kgwele e tshetlha. Bontsha barutswana dikgwele tse pedi tseo.
5. Botsa: A kgwele e pududu e na le letsopa le le lekanang le la kgwele e tshetlha?
6. E re: Arabelang mo go 26.
7. Potoka letsopa le le setlha go nna kgwele gape mme o supetse barutwana dikgwele tse pedi tseo.
8. Potoka kgwele e tshetlha go tshwana le noga e telele.
9. Botsa: A go na le letsopa le le lekanang le la noga mo kgweleng?
10. E re: Arabelang mo go 27.
- 18A. Didirisiwa: Kgwele e le yosi le selekanyo.
- Tsela: 1. Lekanya bokete jwa kgwele mo selekanyong.
2. Botsa barutwana gore boima jwa kgwele ke bokae?
3. Pitlelela kgwele jaanong.
4. Botsa: A lengathwana la letsopa le le pitleletsweng le tla nna le boima jo bo lekanang le jwa kgwele fa e na e lekannngwe mo selekanyong?
5. E re: Arabelang mo go 28.

- 18B. Didirisiwa: Selekanyo le dikgwele tse pedi tsa letsopa (pudu=du le tshetlha).
- Tsela: 1. Lekanya dikgwele mo selekanyong go lemoga gore di a lekana ka boima kgotsa boima jwa tsone bo a lekana.  
 2. Jaanong pitilelela kgwele e tshetlha.  
 3. Botsa: A mangathwana a mabedi a letsopa a sa ntse a lekana ka boima?  
 4. Arabelang mo go 29.  
 5. Potoka lengathwana la letsopa le le pitlilweng go nna gape mo popegong ya kgwele.  
 6. Bontsha barutwana dikgwele tse pedi tseo.  
 7. Potoka kgwele e tshetlha go tshwana le noga e telele.  
 8. Botsa: A boima jwa noga bo sa lekana le jwa kgwele?  
 9. E re: Arabelang mo go 30.
- 19A. Didirisiwa: Kgwele e le yosi ya letsopa le galase e tladitswe tharo-nneng ka metsi.
- Tsela: 1. Leketlhiswa kgwele mo metsing mme o tshwaye mothamo wa metsi.  
 2. A barutwana ba tlhome kelotlhoko ya bone mo mothamong wa metsi.  
 3. Jaanong ntsha kgwele.  
 4. Pitilelela kgwele.  
 5. Botsa barutswana: Gotla diragalang ka mothamo wa metsi fa lengathwana le le pitileletsweng la letsopa le ka leketlhiswa mo galaseng? A mothamo wa metsi o dula o sa fetoge kgotsa o tla tlhatlhoga/oketsega? A mothamo wa metsi o tla boa o ntsifala (tlhatlhoga) kgotsa o ngotlega (fokotsega) jaaka mo lebakeng la kgwele?  
 6. Raya barutwana: Arabelang mo go 31.
- 19B. Didirisiwa: Dikgwele tse pedi tsa letsopa (pudu=du le tshetlha) le digalase tse pedi tse di tshwanang di tladitswe tharo-nneng ka metsi.
- Tsela: 1. Bontsha barutwana dikgwele mme o tiiseletse gore di lekana ka bogolo.

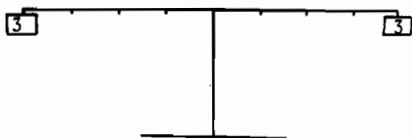
2. Botsa: A go na le bontsi jwa letsopa jo bo leka=  
nang mo dikgweleng tse pedi?
  3. E re: Arabelang mo go nngwe ya diphatlha mo go 32.
  4. Botsa: A dikgwele tse pedi tse di lekana ka boima?
  5. E re: Arabelang mo go nngwe ya diphatlha mo go 33.
  6. Digela bolo e pudutswana mo ngweng ya digalase mme  
o tshwaye mothamo wa metsi.
  7. Botsa: Go tlaa diregang fa bolo kgwele e  
tshetlha e tsennngwa mo galaseng e nngwe ya  
metsi? (O seka wa tsenya bolo kgwele e  
tshetlha mo metsing).
  8. E re: Arabelang mo go nngwe ya diphatlha mo go 34.
  9. Pittelela kgwele e tshetlha.
  10. Botsa: Go tla diragaleng fa letsopa le le pittele=  
tsweng le ka tsennngwa mo metsing? A le tla  
tlhatlhosetsa mothamo wa metsi kwa godimo  
kgotsa kwa tlase jaaka kgwele a kgotsa mo=  
thamo wa metsi o tla dula o sa fetoge?
  11. E re: Arabelang mo go 35.
  12. Potoka lengathwana la letsopa le le setlha gape  
mo sebopegong sa kgwele.
  13. Bontsha barutwana dikgwele tse pedi tseo.
  14. Potoka kgwele e tshetlha mo sebopegong sa noga.
  15. Botsa: Go diragalang fa noga e ka tsennngwa mo  
metsing? A e tla tlhatlhosetsa mothamo wa  
metsi kwa godimo kgotsa kwa tlase jaaka  
kgwele a kgotsa mothamo wa metsi o tla  
dula o sa fetoge?
  16. E re: Arabelang mo go 36.
20. Aparata: Digalase tse pedi tse di tshwanang ka selekano le  
e le ngwe e telele, e tshesane go feta tse dingwe  
tse pedi.
- Tsela: Tlatsa digalase tse pedi ka metsi. Tlhokomela gore  
bogodimo jwa metsi bo a lekana ka bogodimo.
1. Botsa: A metsi a lekana mo digalaseng?
  2. E re: Tshwaang dikarabo mo go 37.
  3. Jaanong tshela metsi a galase e nngwe mo galaseng  
e telele.

4. Botsa: A go na le metsi mo galaseng . e telele a a lekanang le metsi a a mo digalaseng tse dingwe kgotsa go na le metsi a mantsi kgotsa a manyennyane?
5. E re: Tshwaang dikarabo tsa lona mo go 38.

21. Didirisiwa: Selekanyo le makete a a farologaneng.

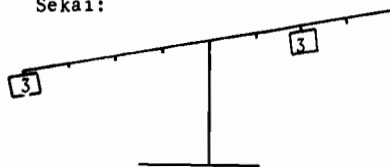
- Tsela:
1. Baa selekanyo mo barutwana botlhe mo phaphosing ba ka se bonang sentle.
  2. Ba lemotshe gore bokgala mo matsogong a selekanyo a a lekana.
  3. Ba lemotshe gore boima mo matlhakoreng ka bobedi a selekanyo bo a lekana fa go sena makete ape.
  4. Ba lemotshe ka makete a motso wa boima jwatharo gore matlhakore a selekanyo a lekana ka boima fa makete a emetse kgakala ka go lekana.

Sekai:



5. Ba lemotshe gore fa lekete le le ka fa molemeng le beilwe mo tulong e le nngwe mme le le kafa mojeng le atameditswe kafa gare, letlhakore la mo- lema le botlhofo.

Sekai:



6. Pega lekete la motso wa 4 kafa mojang, pega la 5 gape o boe o pege la 6. Ka lekete la motso wa 6 selekanyo se tshwanetse se a bo se lekana ka boima.

Sekai:



7. Tlosa makete mo selekanyong.  
8. Pega lekete la 6 kafa molemeng mo bogareng jwa letsogo.  
9. Pega lekete la 6 kafa mojang gore matsogo a selekanyo a lekane ka boima.  
10. Jaanong suthisa 6 kafa mojang mme o bontshe gore letlhakore la moja le boima.  
11. Pega 5 mo boemong jwa 6 kafa mojang, morago o pege 4 le 3.  
12. Bontsha gore jaanong selekanyo se a sekana ka boima fa go pegilwe 3.

Raya barutwana o re: Arabelang potso e mo go 39 mo lokwalong la dikarabo. Fa lo sa kgone go araba potso e le yosi, e tlogele mme o tswelale ka e e latelang.

22. E re: Go na le basimane ba bararo, Jakoba, Wellem le Petoro. Jakoba o mogolo mo go Petoro. Petoro o monnye mo go Wellem.

Botsa: Ke mang yo monnye mo basimaneng ba bararo ba?

E re: Arabelang mo go 40.

23. E re: Monna o mogolo gararo ka tsalo mo go morwadi, Maria, gape ga 5 mogolo ka tsalo mo go morwae Piet.

Botsa: Ke mang mo go Maria kgotsa Piet yo mogolo ka tsalo?

E re: Arabelang mo go 41.

## DENKVLAKTOETS

Antwoordblad in Afrikaans

Naam: .....  
 Skool: .....  
 Seun: .....  
 Meisie: .....  
 Geboortedatum: .....

Antwoordblad in Tswana

Leina: .....  
 Sekolo: .....  
 Mosimane: .....  
 Mosetsane: .....  
 Letsatsi le ngwaga wa botsa-  
 la: .....

1. A is die langste  
 B is die langste  
 Hulle is ewe lank  
 'n Mens kan nie sê nie

2. Sam is die langste  
 Piet is die langste  
 Hulle is ewe lank  
 'n Mens kan nie sê nie

3. A is die langste  
 B is die langste  
 Hulle is ewe lank  
 'n Mens kan nie sê nie

4. Hulle is naby mekaar  
 Hulle is ver van mekaar  
 af  
 'n Mens kan nie sê nie

5. Hulle is nog naby mekaar  
 Hulle is ver van mekaar  
 af  
 'n Mens kan nie sê nie


1. A e telele go feta  
 B e telele go feta  
 Di lekana ka boleele  
 Motho a ka se bolele  
 (rurefatse)


2. Sam o moleele go feta  
 Piet o moleele go feta  
 Ba lekana ka boleele  
 Motho a ka se bolele  
 (rurefatse)


3. A ke se seleele go feta  
 B ke se seleele go feta  
 Di lekanaka boleele  
 Motho a ka se bolele  
 (rurefatse)


4. Ba bapile  
 Ba katogane  
 Motho a ka se bolele  
 (rurefatse)


5. Ba sa ntse ba bapile  
 Ba sa katogane  
 Motho a ka se bolele  
 (rurefatse)

- |                                                                                                                                         |                                                                                                              |                                                                                                                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>6. Die paaie is ewe lank<br/>A is die langste<br/>B is die langste<br/>'n Mens kan nie sê nie</p>                                    | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/> | <p>6. Ditsela di lekana ka bolelele<br/>A e telele go feta<br/>B e telele go feta<br/>Motho a ka se bolele<br/>(rurefatse)</p>                                                          |
| <p>7. Ja, hulle het ewe veel<br/>plek<br/>Nee, hulle het nie ewe<br/>veel plek nie<br/>'n Mens kan nie sê nie</p>                       | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                             | <p>7. Ee, ba na le tulo e e leka=<br/>nang<br/>Nnyaa, ga ba na tulo e e le=<br/>kanang<br/>Motho a ka se bolele (rure=<br/>fatse)</p>                                                   |
| <p>8. Ja, hulle het ewe veel<br/>plek<br/>Nee, Silas het meer plek<br/>Nee, Josef het meer plek<br/>'n Mens kan nie sê nie</p>          | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/> | <p>8. Ee, ba na le tulo e e leka=<br/>nang<br/>Nnyaa, Silase o na le tulo<br/>e e fetang<br/>Nnyaa, Josefa o na le tulo<br/>e e fetang<br/>Motho a ka se bolele</p>                     |
| <p>9. Silas het die meeste plek<br/>Josef het die meeste plek<br/>Hulle het ewe veel plek<br/>'n Mens kan nie sê nie</p>                | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/> | <p>9. Silase o na le tulo e ntsi<br/>Josefa o na le tulo e ntsi<br/>Ba na le tulo e e lekanang<br/>Motho a ka se bolele<br/>(rurefatse)</p>                                             |
| <p>10. Ja, hulle is nog ewe<br/>groot<br/>Nee, hulle is nie meer<br/>ewe groot nie<br/>'n Mens kan nie sê nie</p>                       | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                             | <p>10. Ee, di santse di lekana ka<br/>bogolo<br/>Nnyaa, ga di sa tlhole di<br/>lekana ka bogolo<br/>Motho a ka se bolele<br/>(rurefatse)</p>                                            |
| <p>11. Silas het die meeste<br/>beeste<br/>Josef het die meeste<br/>beeste<br/>Hulle het ewe veel beeste<br/>'n Mens kan nie sê nie</p> | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/> | <p>11. Silase o na le dikgomo tse<br/>dintsi<br/>Josefa o na le dikgomo tse<br/>dintsi<br/>Bana le dikgomo tse di le=<br/>kanang ka bontsi<br/>Motho a ka se bolele<br/>(rurefatse)</p> |

- |                                                                                                                                    |                                                                                                              |                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>12. Silas het die meeste beeste<br/>Josef het die meeste beeste<br/>Hulle het ewe veel beeste</p> <p>'n Mens kan nie sê nie</p> | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/> | <p>12. Silase o na le dikgomo tse dintsi<br/>Josefa o na le dikgomo tse dintsi<br/>Bana le dikgomo tse di lekanang ka bontsi<br/>Motho a ka se bolele (rurefatse)</p> |
| <p>13. Daar is meer meisies<br/>Daar is meer kinders</p> <p>'n Mens kan nie sê nie</p>                                             | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                             | <p>13. Go na le basetsana ba bantsi<br/>Go na le bana ba bantsi<br/>Motho a ka se bolele (rurefatse)</p>                                                              |
| <p>14. Ja<br/>Nee</p> <p>'n Mens kan nie sê nie</p>                                                                                | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                             | <p>14. Ee<br/>Nnyaa<br/>Motho a ka se bolele (rurefatse)</p>                                                                                                          |
| <p>15. Ja<br/>Nee</p> <p>'n Mens kan nie sê nie</p>                                                                                | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                             | <p>15. Ee<br/>Nnyaa<br/>Motho a ka se bolele (rurefatse)</p>                                                                                                          |
| <p>16. Ja<br/>Nee</p> <p>'n Mens kan nie sê nie</p>                                                                                | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                             | <p>16. Ee<br/>Nnyaa<br/>Motho a ka se bolele (rurefatse)</p>                                                                                                          |
| <p>17. Ja<br/>Nee</p> <p>'n Mens kan nie sê nie</p>                                                                                | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                             | <p>17. Ee<br/>Nnyaa<br/>Motho a ka se bolele (rurefatse)</p>                                                                                                          |
| <p>18. Ja<br/>Nee</p> <p>'n Mens kan nie sê nie</p>                                                                                | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                             | <p>18. Ee<br/>Nnyaa<br/>Motho a ka se bolele (rurefatse)</p>                                                                                                          |
| <p>19. Ja<br/>Nee</p> <p>'n Mens kan nie sê nie</p>                                                                                | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                             | <p>19. Ee<br/>Nnyaa<br/>Motho a ka se bolele (rurefatse)</p>                                                                                                          |

20. Ja  
Nee  
'n Mens kan nie sê nie


20. Ee  
Nnyaa  
Motho a ka se bolele  
(rurefatse)

21. Ja  
Nee  
'n Mens kan nie sê nie


21. Ee  
Nnyaa  
Motho a ka se bolele  
(rurefatse)

22.



22.



23. 18 ... .. = 12

+6
-6
x6
÷6

23. 18 ... .. = 12

24. Ja  
Nee  
'n Mens kan nie sê nie.


24. Ee  
Nnyaa  
Motho a ka se bolele  
(rurefatse)

25. Ja  
Nee  
'n Mens kan nie sê nie


25. Ee  
Nnyaa  
Motho a ka se bolele  
(rurefatse)

26. Ja  
Nee  
'n Mens kan nie sê nie

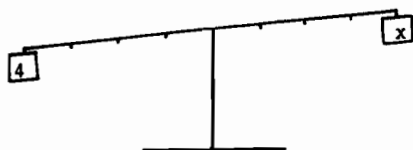

26. Ee  
Nnyaa  
Motho a ka se bolele  
(rurefatse)

- |                                                                                                                                                                                                   |                                                                                                                                          |                                                                                                                                                                                                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 27. Ja<br>Nee<br>'n Mens kan nie sê nie                                                                                                                                                           | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                                                         | 27. Ee<br>Nnyaa<br>Motho a ka se bolele<br>(rurefatse)                                                                                                                                                                                                                 |
| 28. Ja<br>Nee<br>'n Mens kan nie sê nie                                                                                                                                                           | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                                                         | 28. Ee<br>Nnyaa<br>Motho a ka se bolele<br>(rurefatse)                                                                                                                                                                                                                 |
| 29. Ja<br>Nee<br>'n Mens kan nie sê nie                                                                                                                                                           | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                                                         | 29. Ee<br>Nnyaa<br>Motho a ka se bolele<br>(rurefatse)                                                                                                                                                                                                                 |
| 30. Ja<br>Nee<br>'n Mens kan nie sê nie                                                                                                                                                           | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                                                         | 30. Ee<br>Nnyaa<br>Motho a ka se bolele<br>(rurefatse)                                                                                                                                                                                                                 |
| 31. Die watervlak gaan net<br>so bly<br>Die watervlak gaan hoër<br>styg<br>Die watervlak gaan minder<br>styg<br>Die watervlak gaan so hoog<br>styg soos met die bal<br><br>'n Mens kan nie sê nie | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/> | 31. Bogodimo ba metsi bo tla<br>nna jalo fela<br>Bogodimo ba metsi bo tla<br>tlhatlogela godimo<br>Bogodimo ba metsi bo tla<br>tlhatlogela godimo gannye<br>Bogodimo ba metsi bo tla<br>tlhatlogela godimo jaaka ka<br>kgolokwe<br>Motho a ka se bolele<br>(rurefatse) |
| 32. Ja<br>Nee<br>'n Mens kan nie sê nie                                                                                                                                                           | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                                                         | 32. Ee<br>Nnyaa<br>Motho a ka se bolele<br>(rurefatse)                                                                                                                                                                                                                 |
| 33. Ja<br>Nee<br>'n Mens kan nie sê nie                                                                                                                                                           | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                                                         | 33. Ee<br>Nnyaa<br>Motho a ka se bolele<br>(rurefatse)                                                                                                                                                                                                                 |

- |                                                                                                                                                                                                   |                                                                                                                                 |  |  |  |                                                                                                                                                                     |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|--|--|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>34. Die watervlak gaan net so bly<br/>Die watervlak gaan hoër styg<br/>Die watervlak gaan minder styg<br/>Die watervlak gaan so hoog styg soos met die bal<br/><br/>'n Mens kan nie sê nie</p> | <table border="1"> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table> |  |  |  |                                                                                                                                                                     |                                                                                                                                                                                               | <p>34. Bogodimo ba metsi bo tla nna jalo fela<br/>Bogodimo ba metsi bo tla tlhatlogela godimo<br/>Bogodimo ba metsi bo tla tlhatlogela godimo ganye<br/>Bogodimo ba metsi bo tla tlhatlogela godimo jaaka ka kgolokwe<br/>Motho a ka se bolele (rurefatse)</p> |
|                                                                                                                                                                                                   |                                                                                                                                 |  |  |  |                                                                                                                                                                     |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                   |                                                                                                                                 |  |  |  |                                                                                                                                                                     |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                   |                                                                                                                                 |  |  |  |                                                                                                                                                                     |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                   |                                                                                                                                 |  |  |  |                                                                                                                                                                     |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                   |                                                                                                                                 |  |  |  |                                                                                                                                                                     |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                |
| <p>35. Die watervlak gaan hoër wees<br/>Die watervlak gaan laer wees<br/>Die watervlak gaan die-selwde wees<br/><br/>'n Mens kan nie sê nie</p>                                                   | <table border="1"> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>                     |  |  |  |                                                                                                                                                                     | <p>35. Mothamo wa metsi o tla nna kwa godimo<br/>Mothamo wa metsi o tla nna kwa tlase<br/>Mothamo wa metsi o tla nna o sa fetoge<br/>Motho a ka se bolele (rurefatse)</p>                     |                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                   |                                                                                                                                 |  |  |  |                                                                                                                                                                     |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                   |                                                                                                                                 |  |  |  |                                                                                                                                                                     |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                   |                                                                                                                                 |  |  |  |                                                                                                                                                                     |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                   |                                                                                                                                 |  |  |  |                                                                                                                                                                     |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                |
| <p>36. Die watervlak gaan hoër wees<br/>Die watervlak gaan laer wees<br/>Die watervlak gaan die-selwde wees<br/><br/>'n Mens kan nie sê nie</p>                                                   | <table border="1"> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>                     |  |  |  |                                                                                                                                                                     | <p>36. Mothamo wa metsi o tla nna kwa godimo<br/>Mothamo wa metsi o tla nna kwa tlase<br/>Mothamo wa metsi o tla nna o sa fetoge<br/>Motho a ka se bolele (rurefatse)</p>                     |                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                   |                                                                                                                                 |  |  |  |                                                                                                                                                                     |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                   |                                                                                                                                 |  |  |  |                                                                                                                                                                     |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                   |                                                                                                                                 |  |  |  |                                                                                                                                                                     |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                   |                                                                                                                                 |  |  |  |                                                                                                                                                                     |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                |
| <p>37. Daar is ewe veel water in die twee glase<br/><br/>Daar is nie ewe veel water in die twee glase nie<br/><br/>'n Mens kan nie sê nie</p>                                                     | <table border="1"> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>                                         |  |  |  | <p>37. Go na le metsi a a lekanang ka bontsi mo digalaseng tse pedi<br/>Ga go na metsi a a lekanang mo digalaseng tse pedi<br/>Motho a ka se bolele (rurefatse)</p> |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                   |                                                                                                                                 |  |  |  |                                                                                                                                                                     |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                   |                                                                                                                                 |  |  |  |                                                                                                                                                                     |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                   |                                                                                                                                 |  |  |  |                                                                                                                                                                     |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                |
| <p>38. Daar is meer water in die lang glas<br/>Daar is minder water in die lang glas<br/>Daar is ewe veel water in die twee glase<br/><br/>'n Mens kan nie sê nie</p>                             | <table border="1"> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>                     |  |  |  |                                                                                                                                                                     | <p>38. Go na le metsi a mantsi mo galaseng e telele<br/>Go na le metsi a manyenyane mo galaseng e telele<br/>Metsi a a lekana mo digalaseng tse pedi<br/>Motho a ka se bolele (rurefatse)</p> |                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                   |                                                                                                                                 |  |  |  |                                                                                                                                                                     |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                   |                                                                                                                                 |  |  |  |                                                                                                                                                                     |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                   |                                                                                                                                 |  |  |  |                                                                                                                                                                     |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                   |                                                                                                                                 |  |  |  |                                                                                                                                                                     |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                |

39a.

39a.



Watter gewig moet by X geplaas word om die skaal te balanseer? Maak 'n kruisie oor die gewig wat jy sal gebruik.

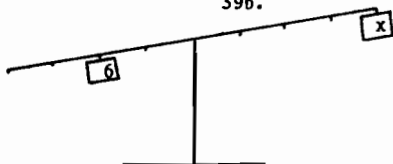
2	4	6	8	10
---	---	---	---	----

Ke boima bofe jo bo tshwane-tseng go pegiwa fa go x gore matlhakore a selekanyo a le-kane ka boima? Tshwaya boima jo o ka bo dirisang ka sefapaano.

2	4	6	8	10
---	---	---	---	----

39b.

39b.



Watter gewig moet by X geplaas word om die skaal te balanseer? Maak 'n kruisie oor die gewig wat jy sal gebruik.

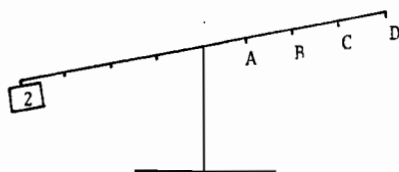
3	6	9	12	15	18
---	---	---	----	----	----

Ke boima bofe jo bo tshwanet-seng go pegiwa mo go X gore matlhakore a selekanyo a le-kane ka boima? Tshwaya boima jo o ka bo dirisang ka sefapaano.

3	6	9	12	15	18
---	---	---	----	----	----

39c.

39c.



Waar moet 'n 4kg gewig  
geplaas word om die  
skaal te balanseer?

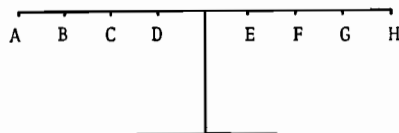
Boima jwa 4kg bo tshwanetse go  
go pegiwa fa kae gore matla=  
kore a selekanyo a lekane  
ka boima?

A	B	C	D
---	---	---	---

A	B	C	D
---	---	---	---

39d.

39d.



Jy het twee gewigte, een  
van 5kg en een van 10kg.  
Waar aan die linkerkant  
sal jy die 5-kg-gewig  
plaas en waar aan die  
regterkant sal jy die 10-  
kg-gewig plaas om die skaal  
te ba-amseer? Ek sal die  
5-kg-gewig plaas by  

A	B	C	D
---	---	---	---

 en ek sal  
die 10-kg-gewig plaas by  

E	F	G	H
---	---	---	---

O na le makete a mabedi,  
bongwe ke jwa 5kg jo bongwe  
e le jwa 10 kg. O tla pega  
boima ba 5kg kae ebile o tla  
pega boima bo 10 kg kae gore  
matlhakore a selekanyo a le=  
kane ka boima. Ke tla pega  
boima jwa 5kg mo go  

A	B	C	D
---	---	---	---

 e bile ke  
tla pega boima jwa 10kg mo  
go 

E	F	G	H
---	---	---	---

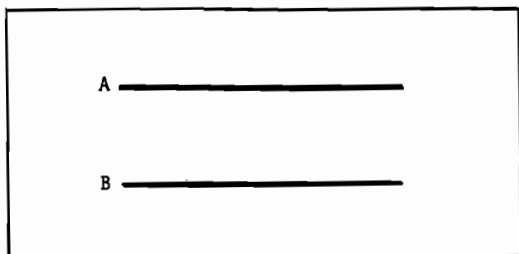
40. Jacob  
Willem  
Petrus  
'n Mens kan nie sê nie


40. Jakoba  
Wellem  
Petro  
Motho a ka se bolele  
(rurefatse)

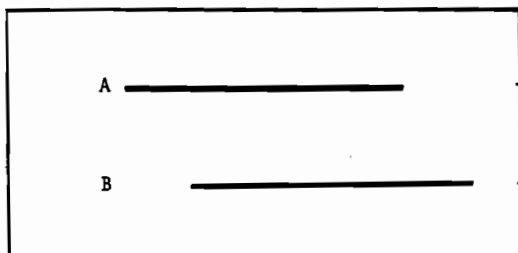
41. Maria is die oudste  
Piet is die oudste  
'n Mens kan nie sê nie


41. Maria ke yo mogolo ka tsalo  
Piet ke yo mogolo ka tsalo  
Motho a ka se bolele  
(rurefatse)

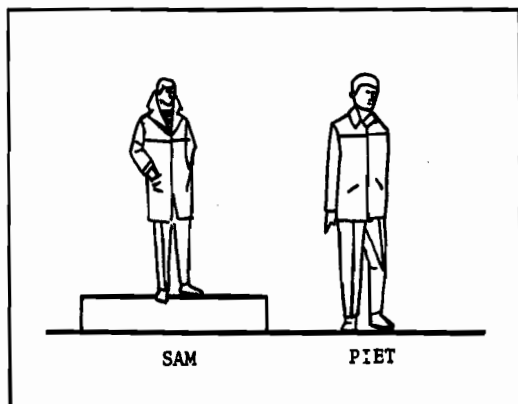
Kaart 1A

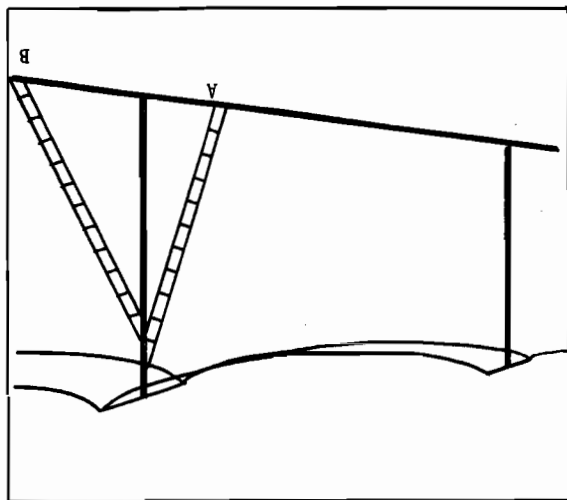


Kaart 1B

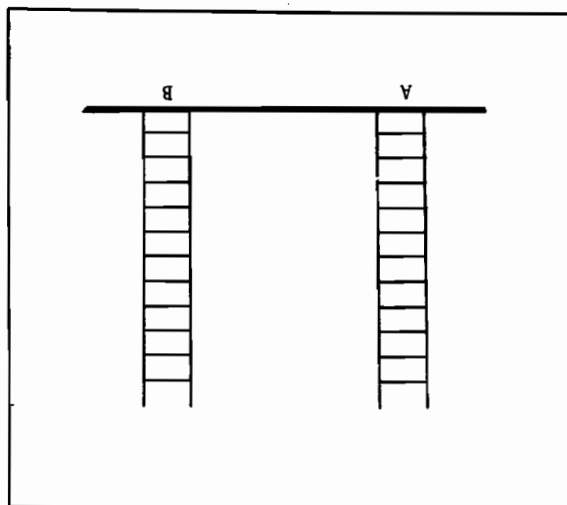


Kaart 2



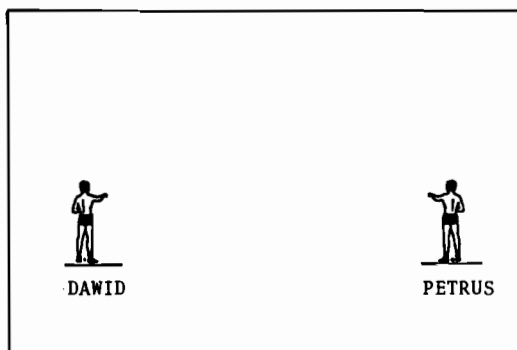


Kaart 3B

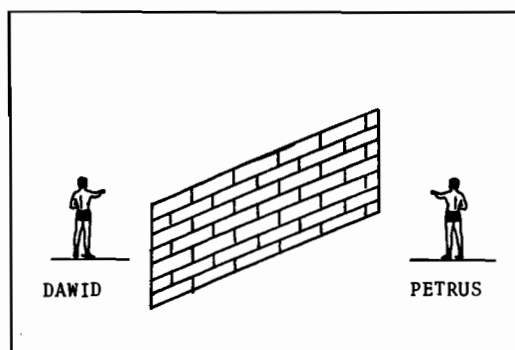


Kaart 3A

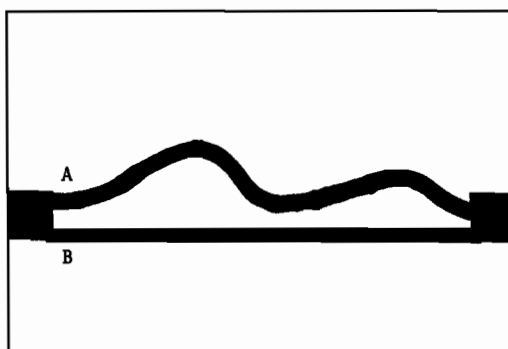
Kaart 4A

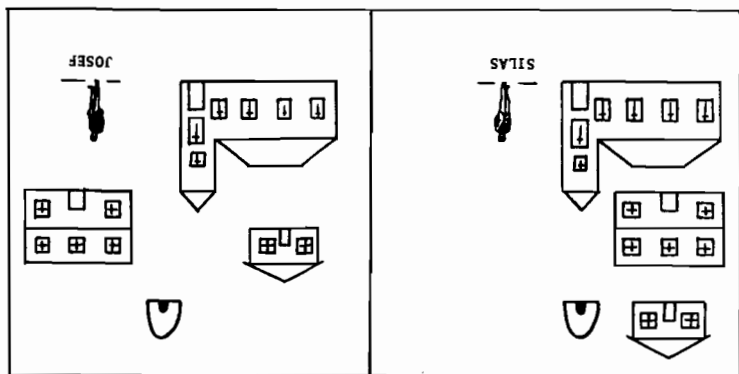


Kaart 4B

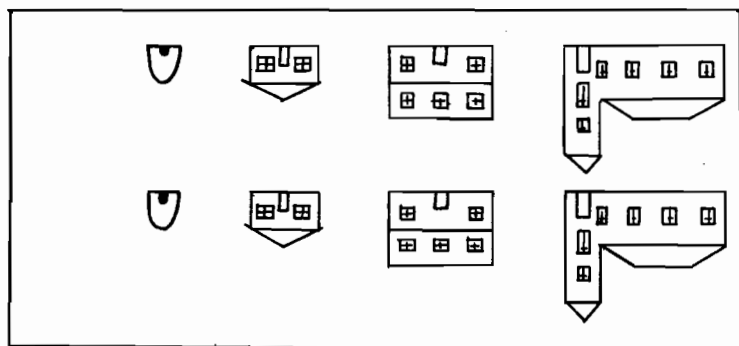


Kaart 5

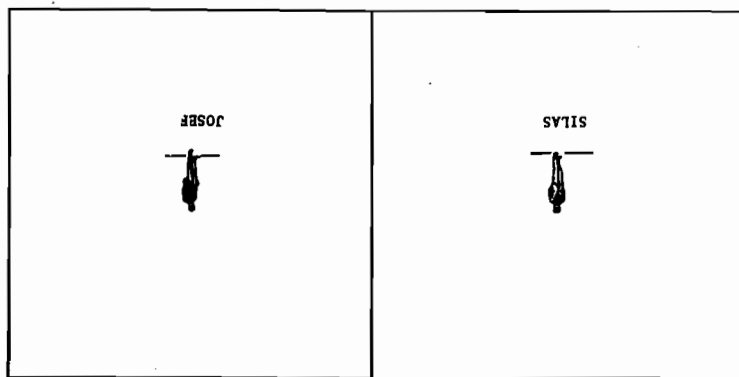




Kaart 6C

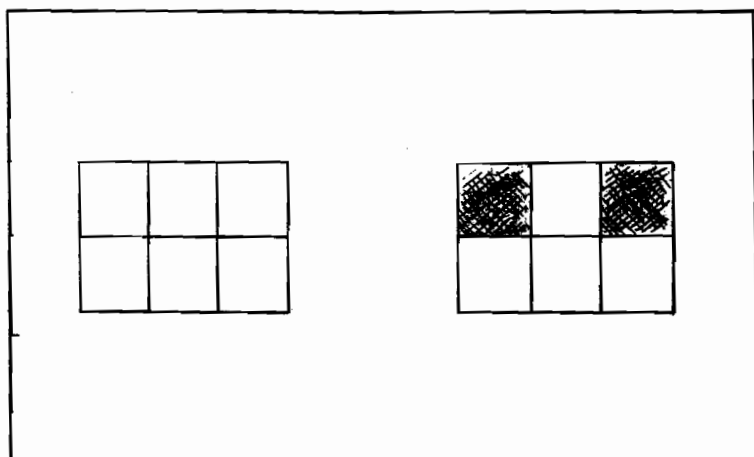


Kaart 6B

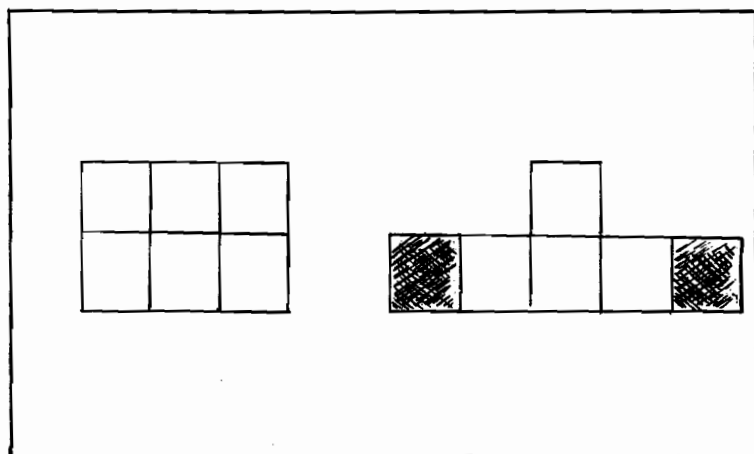


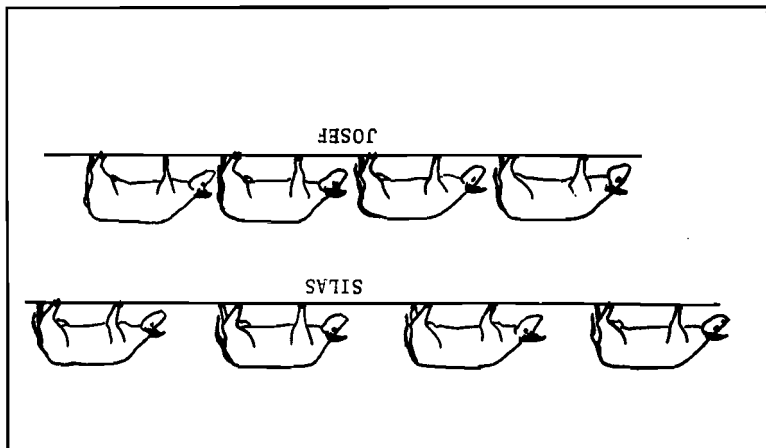
Kaart 6A

Kaart 7A

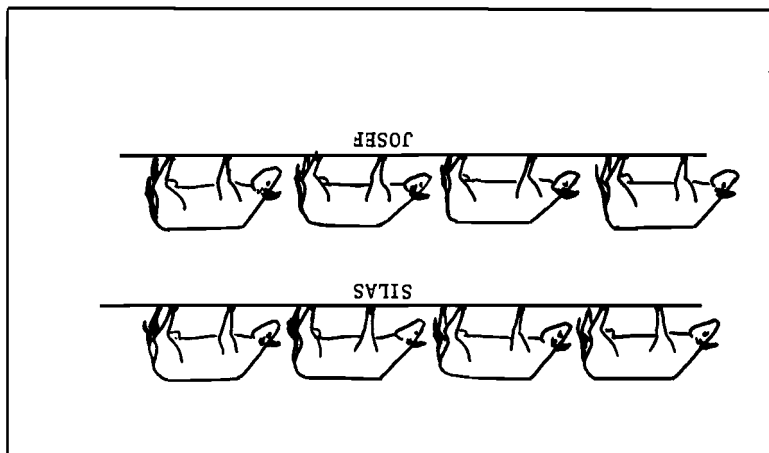


Kaart 7B



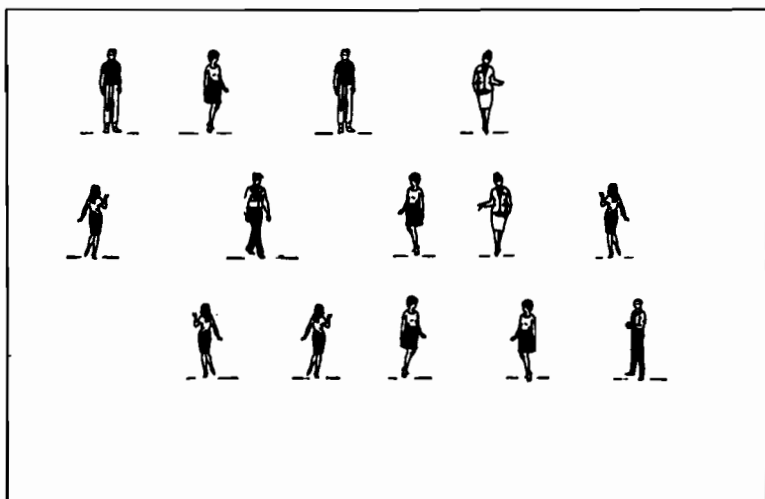


Kaart 8B

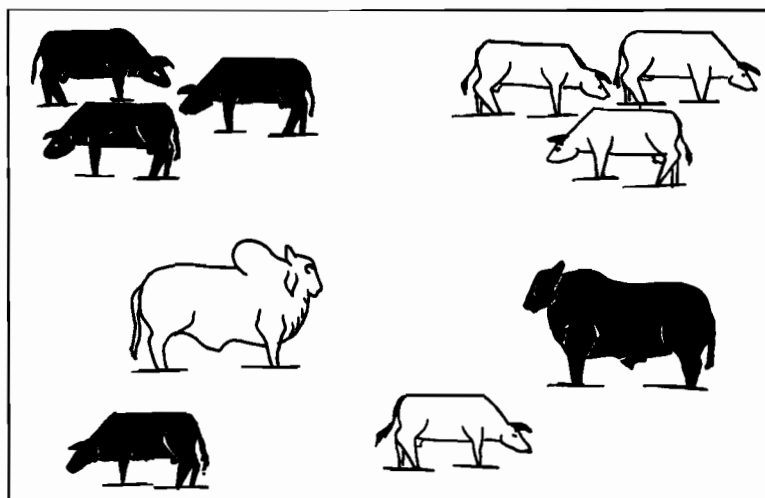


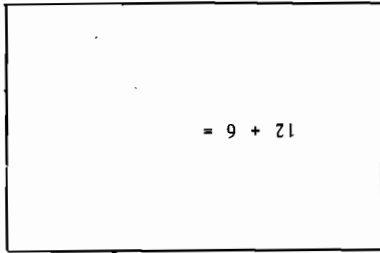
Kaart 8A

Kaart 9

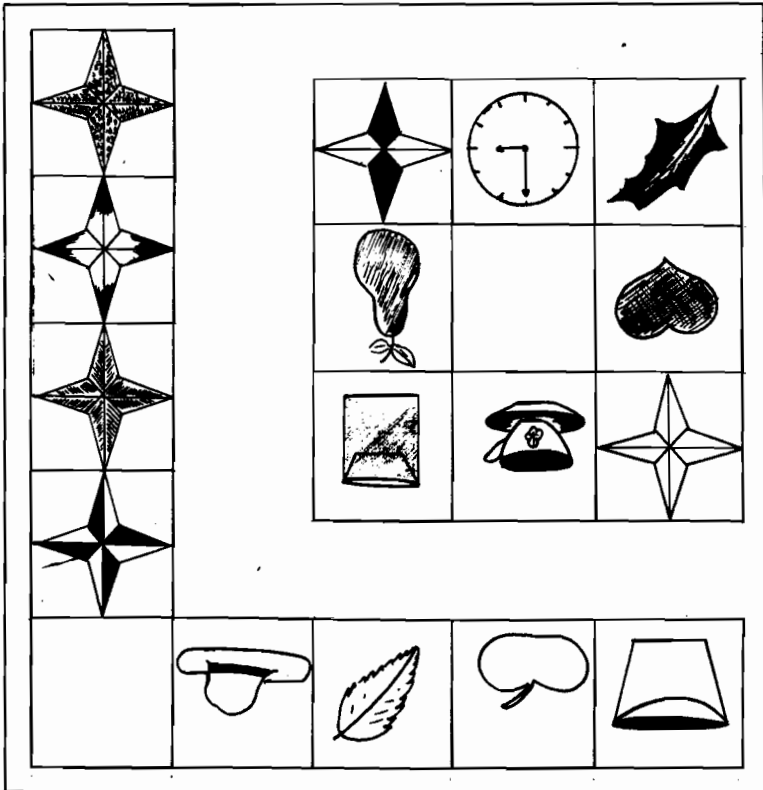


Kaart 10





Kaart 12



Kaart 11

## SOSIO-ËKONOMIESE STATUS VRAELYS IN AFRIKAANS

Naam: ..... Skool: .....  
 Seun: ..... Meisie:.....  
 Geboortedatum: .....

- |                                                                             |    |     |
|-----------------------------------------------------------------------------|----|-----|
| 1. Was jou pa op skool?                                                     | Ja | Nee |
| 2. Watter standerd het jou pa op skool voltooi?                             | 1  | 6   |
|                                                                             | 2  | 7   |
|                                                                             | 3  | 8   |
|                                                                             | 4  | 9   |
|                                                                             | 5  | 10  |
| 3. Het jou vader ná skool verder gestudeer aan 'n universiteit of kollege?  | Ja | Nee |
| 4. Was jou moeder op skool?                                                 | Ja | Nee |
| 5. Watter standerd het jou moeder op skool voltooi?                         | 1  | 6   |
|                                                                             | 2  | 7   |
|                                                                             | 3  | 8   |
|                                                                             | 4  | 9   |
|                                                                             | 5  | 10  |
| 6. Het jou moeder ná skool verder gestudeer aan 'n universiteit of kollege? | Ja | Nee |
| 7. Waar werk jou vader? .....                                               |    |     |
| .....                                                                       |    |     |
| 8. Watter soort werk doen jou vader? .....                                  |    |     |
| .....                                                                       |    |     |
| 9. Waar werk jou moeder? .....                                              |    |     |
| .....                                                                       |    |     |
| 10. Watter soort werk doen jou moeder? .....                                |    |     |
| .....                                                                       |    |     |
| 11. Watter standerd wil jou ouers hê dat jy op skool sal voltooi?           | 1  | 6   |
|                                                                             | 2  | 7   |
|                                                                             | 3  | 8   |
|                                                                             | 4  | 9   |
|                                                                             | 5  | 10  |

12. Verwag jou ouers van jou om nã skool verder te studeer aan 'n universiteit of kollege?  Ja  Nee
13. Watter soort werk wil jou ouers hê dat jy een=dag moet doen? .....
14. Watter werk wil jy eendag doen? .....
15. Woon jy by jou eie ouers?  Ja  Nee
16. Hoeveel mense woon in julle huis?
- |   |    |
|---|----|
| 3 | 8  |
| 4 | 9  |
| 5 | 10 |
| 6 | 11 |
| 7 | 12 |
17. Hoeveel kinders is julle in die huis?
- |   |    |
|---|----|
| 1 | 6  |
| 2 | 7  |
| 3 | 8  |
| 4 | 9  |
| 5 | 10 |
18. Hoeveel van jou eie broers en susters is ouer as jy?
- |   |   |
|---|---|
| 1 | 4 |
| 2 | 5 |
| 3 | 6 |
19. Hoeveel van jou eie broers en susters is jonger as jy?
- |   |   |
|---|---|
| 1 | 4 |
| 2 | 5 |
| 3 | 6 |
20. Is daar ander volwassenes wat by julle in die huis woon?  Ja  Nee
21. Beskryf julle huis deur 'n kruisie in die toepaslike blokkies te maak.
- |                         |    |   |     |
|-------------------------|----|---|-----|
| (a) Getal slaapkamers   | 3  | 2 | 1   |
| (b) Sitkamer            | 1  |   | 0   |
| (c) Eetkamer            | 1  |   | 0   |
| (d) Kombuis             | 1  |   | 0   |
| (e) Badkamer            | 1  |   | 0   |
| (f) Motorhuis           | 1  |   | 0   |
| (g) Het julle 'n motor? | Ja |   | Nee |
| (h) Ry julle daarmee?   | Ja |   | Nee |

- (i) Watter soort motor? .....
- (j) Het julle 'n T.V.-stel? 

Ja	Nee
----	-----

  
 Werk hy? 

Ja	Nee
----	-----

  
 Kleur?  
 Swart en wit?
- (k) Het julle 'n Hi-Fi? 

Ja	Nee
----	-----

  
 Werk hy? 

Ja	Nee
----	-----
- (l) Het julle 'n draagbare radio? 

Ja	Nee
----	-----

  
 Werk hy? 

Ja	Nee
----	-----
- (m) Het julle 'n platespeler? 

Ja	Nee
----	-----

  
 Werk hy? 

Ja	Nee
----	-----
- (n) Het julle 'n vrieskas? 

Ja	Nee
----	-----

  
 Werk hy? 

Ja	Nee
----	-----
- (o) Het julle 'n yskas? 

Ja	Nee
----	-----

  
 Werk hy? 

Ja	Nee
----	-----
- (p) Het julle 'n stoof in die huis? 

Ja	Nee
----	-----

  
 Werk dit? 

Ja	Nee
----	-----
- (q) Watter soort? 

steenkool	elektries
-----------	-----------
- (r) Het julle 'n donkierkar? 

Ja	Nee
----	-----

  
 Ry julle daarmee? 

Ja	Nee
----	-----
- (s) Het julle 'n perdekar? 

Ja	Nee
----	-----

  
 Ry julle daarmee? 

Ja	Nee
----	-----
- (t) Het julle 'n fiets? 

Ja	Nee
----	-----

  
 Ry julle daarmee? 

Ja	Nee
----	-----
- (u) Het julle 'n motorfiets? 

Ja	Nee
----	-----

  
 Ry julle daarmee? 

Ja	Nee
----	-----

VRAELYS VIR SOSIO-EKONOMIESE STATUS IN TSWANA

Leina: ..... Sekolo: .....  
 Mosimane: ..... Mosetsane: .....  
 Letsatsi le ngwaga wa botsala: .....

1. Rraago o ne a tsene sekolo?  
 2. Rraago o feditse maemo a fe mo sekolong?

Ee	Nnyaa
1	6
2	7
3	8
4	9
5	10

3. Rraago o ile a ithuta mo yunibesiting  
 kgotsa mo koletsheng fa morago a sena go  
 fetsa sekolo?

4. Mmaago o ne a tsene sekolo?  
 5. Mmaago o feditse maemo afe mo sekolong?

Ee	Nnyaa
Ee	Nnyaa
1	6
2	7
3	8
4	9
5	10

6. Mmaago o ile a ithuta mo yunibesiting  
 kgotsa mo kholetsheng fa a sena go fetsa  
 sekolo?

7. Rraago o dira kae? .....  
 .....  
 8. Rraago o dira tiro ya eng? .....  
 .....  
 9. Mmaago o dira kae? .....  
 .....  
 10. Mmaago o dira tiro ya eng? .....  
 .....

Ee	Nnyaa
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11. Batsadi ba gago ba rata gore o fetse maemo afe mo sekolong?

1
2
3
4
5

6
7
8
9
10

12. Batsadi ba gago ba batla gore o ithute mo yunibesiting kgotsa kholetsheng fa o sena go fetsa sekolô?

Ee
----

Nnyaa
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13. Batsadi ba gago ba rata gore o dire tiro efe fa o sena go fetsa sekolo? .....

14. Wena o batla go dira tiro efe fa o godile? .....

15. A wena o nna le batsadi ba gago?

Ee
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Nnyaa
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16. Go dula batho ba ba kae mo lapeng la lona?

3
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8
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4
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9
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5
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10
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6
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11
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7
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12
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17. Lona le banna ba ba kae mo lapeng?

1
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6
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2
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7
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3
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8
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4
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9
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5
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10
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18. Go na le bomogoloo ba ba kae ba ba go fetang ka dingwaga? (O na le bomogoloo ba le kae?)

1
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4
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2
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5
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3
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6
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19. A go na le bomonno ba ba kae ba ba leng ba banyane mo go wêna? (O na le bomonno ba le kae?)

1
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4
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2
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5
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3
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6
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20. A go na le babagolo ba bangwê ba ba dulang le lona mo lapeng?

Ee
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Nnyaa
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21. Ntlo ya lona e nntse jang. Tshawaya ka sefapanong.

	3	2	1
(a) Palo ya di kamore	1		0
(b) Setekamore	1		0
(c) Bojelo	1		0
(d) Boapelo	1		0
(e) Bothapelo	1		0
(f) Ntlo ya dikoloi	1		0
(g) A le na le koloi?	Ee		Nnyaa
(h) A le a e pagama?	Ee		Nnyaa
(i) Koloi ya mofuta ofe? .....			
(j) A le na le T.V.?	Ee		Nnyaa
A se a sebetsa?	Ee		Nnyaa
Ya mebalabala?			
Bontsho le bosweu			
(k) A le na le Hifi?	Ee		Nnyaa
A se a sebetsa?	Ee		Nnyaa
(l) A le na le seyalomoa	Ee		Nnyaa
A se a sebetsa?	Ee		Nnyaa
(m) A le na le rekoto?	Ee		Nnyaa
A se a sebetsa?	Ee		Nnyaa
(n) A lena le frisikase?	Ee		Nnyaa
A se a sebetsa?	Ee		Nnyaa
(o) A lena le esekase?	Ee		Nnyaa
A se a sebetsa?	Ee		Nnyaa
(p) A lena le setofo mo ntlong?	Ee		Nnyaa
A se a sebetsa?	Ee		Nnyaa
(q) Ke sa mofuta ofe?	Kgotsa		Motlakase
(r) A lena le kariki ya ditonki?	Ee		Nnyaa
A le a e pagama?	Ee		Nnyaa
(s) A lena le kariki ya dipitse?	Ee		Nnyaa
A le a e pagama?	Ee		Nnyaa
(t) A lena le baesekele?	Ee		Nnyaa
A le a e pagama?	Ee		Nnyaa
(u) A lena le sethuthu?	Ee		Nnyaa
A le a se pagama?	Ee		Nnyaa

## BYLAE F

## SOSIO-EKONOMIESE STATUS: INDEKS VAN INDIKATORE

	Punte	Totaal
1. Onderwyspeil van ouers		
Vader:	15	
Moeder:	10	25
2. Beroep van ouers		
óf vader	40	
óf moeder	40	40
3. Aspirasie van ouers vir kinders met betrekking tot		
3.1 Onderwyspeil:	5	
3.2 Beroep:	5	10
4. Huislike omstandighede		
4.1 Aantal mense in die huis:	5	
4.2 Aantal kinders in die huis:	5	10
5. Ekonomiese omstandighede		
5.1 Huis:	25	
5.2 Vervoermiddel:	5	
		30+2
		15
	Totaal	100