LESSON NOTES FOR P.6 MATHS TERM 1

Date	Time	No. of pupils

TOPIC : **Set Concepts**

SUB TOPIC : **Equal and Equivalent sets**

COMPETENCES : **The learner;**

- Defines a set
- Describes Equal and Equivalent sets
- Gives examples
- Draws symbols for equal and equivalent sets.

LANGUAGE : **The learner;**

- Reads, spells, pronounces and writes the words
  - Equal
  - Equivalent
  - Same

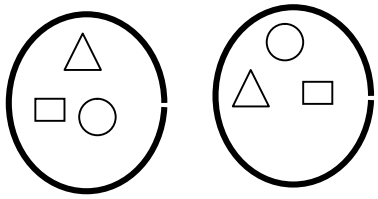
METHODS : Explanation, guided discussion, demonstration.

SKILLS : Equal sets are sets with the same number of elements which are exactly the same. The symbols: "="

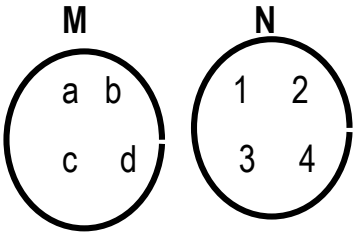
Equivalent sets are sets with the same number of elements but of Different kind symbol: " ⟷ "

Examples

P **Q**



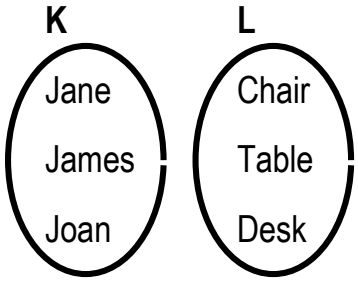
Set P and Q are equal sets.



Set M and N are equivalent sets.

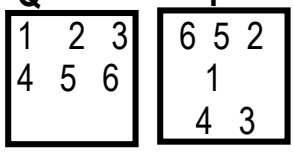
Activity:

1. Study the sets given below and describe them



Set K and L are _____

2. **Q** **P**



Set Q and P are _____

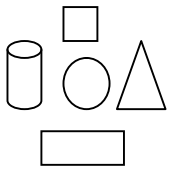
3. A = (△ , ▭ , ◯) B = (⚽ , △ , ◯ , ▭)

Set A and B are _____

4. W= (dogs, cats, sheep, cows) Z = (Books, Pens, Pencils, Rubbers)

W and Z are _____

5. Set

a	0	u w	6	
b	2	x y	4 2	
c	4	z	0	
d	6			

a) How many elements are in C?
b) Write a pair (pick) sets which are equivalent
c) Pick and draw a pair of sets which are equal
d) Which set is equivalent to set G?
e) Which set is equal to set F?

Date	Time	No. of pupils

TOPIC : Set Concepts

SUB TOPIC : UN Equal sets

COMPETENCES : The learner;

- Defines un equal set
- Compares the sets

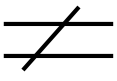
LANGUAGE : The learner;

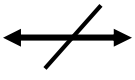
- Reads, spells, pronounces and uses the words
  - Un Equal
  - Non equivalent

METHODS : Brain storming, Guided discovery

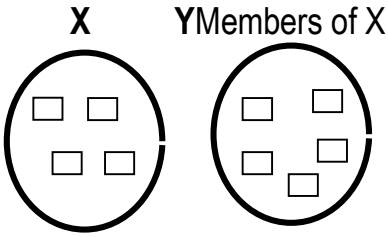
SKILLS : Creative thinking, Effective communication

CONTENT : Unequal sets are sets with the same members but different number of members.

Symbols: 

Non equivalent sets are sets with different number of elements and o of different kind, symbol: 

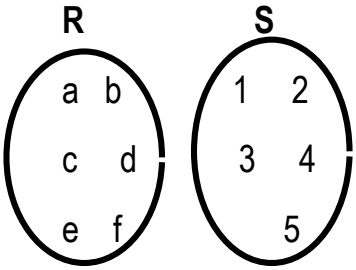
Examples



Members of X and Y are similar.

X and Y have different number of members

X and Y are unequal sets



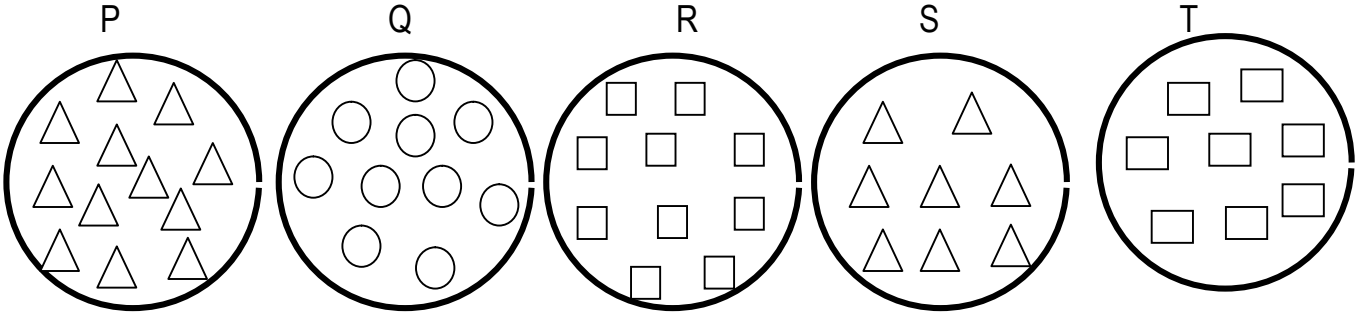
Members of R and S are not similar

R and S have different number of member

R and S are non-equivalent sets

Activity:

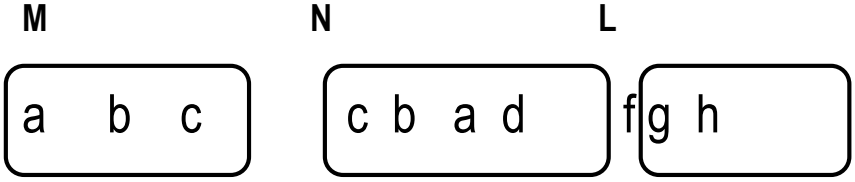
1. Study the sets given below and describe them



Write true or false

a) P and Q are unequal sets
b) P and R are equal sets
c) S and T are equivalent sets
d) Q and T are unequivalent sets
e) R and T are unequivalent sets
f) Q and R are unequal sets

2. Study sets M, N and L below



a) What elements must be removed from N to make M and N equal sets?
b) Which of the given sets M, N and L are unequal sets.
c) Which of the given sets MN and L are non-equivalent sets?

Date	Time	No. of pupils

TOPIC : **Set concepts**

SUB TOPIC : **Interjection and Union sets**

COMPETENCES : **The learner;**

- Defines inter section and union sets
- Identifies the elements of intersection and union set

LANGUAGE : **The learner;**

- Reads, spells, pronounces and writes the intersection and union sets

METHODS : Guide discovery, discussion

SKILLS : Creative thinking, problem solving

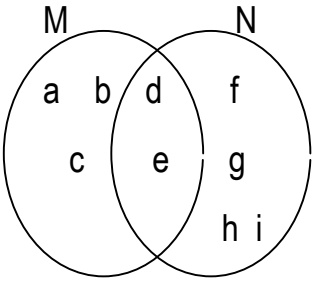
CONTENT : Intersection set is a set of elements common to two or more sets

Symbol ; " ∩ "

Union sets are sets of all elements that contain two or more sets

Examples

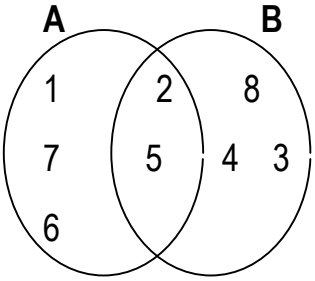
Study the venn diagram below and answer questions



a) List the members of M . M = (a, b, c, d, e)
b) List the members of N . N=(d, e, f, g, h, i)
c) $M \cap N = (d,e)$
d) $M \cup N = (a,b,c,d,e,f,g,h,i)$

Activity

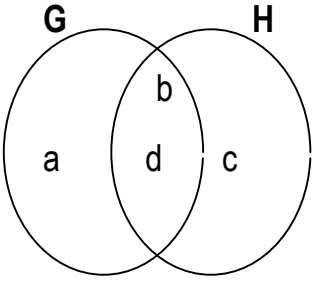
Study the venn diagram below and answer questions



List the members of:

i)A ii)B

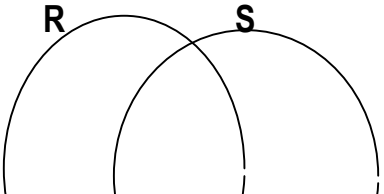
iii)$A \cap B$ iv)$A \cup B$



List the members of:

i)G ii)H

iii)$G \cap H$ iv)$G \cup H$



Tue Sun

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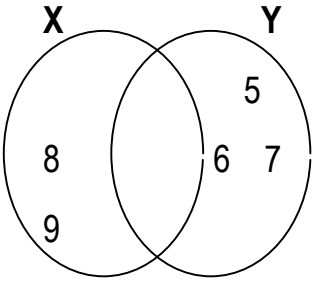
List the members of:

i)R ii)S

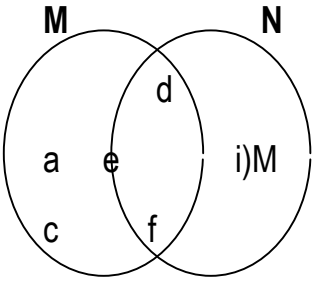
iii)$R \cap S$ iv)$R \cup S$



List the members of:

i)X ii)Y

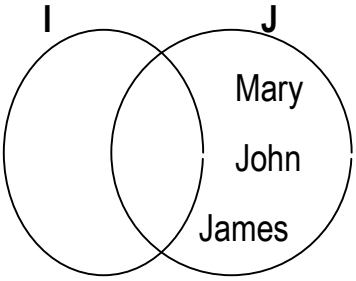
iii)$X \cap Y$ iv)$X \cup Y$



List the members of:

ii)N

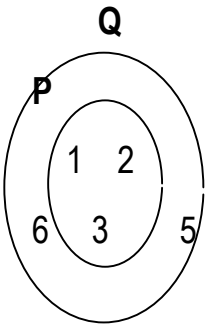
iii)$M \cap N$ iv)$M \cup N$



List the members of:

i)I ii)J

iii)$I \cap J$ iv)$I \cup J$



List the members of:

i)P ii)Q

iii)$P \cap Q$ iv)$P \cup Q$

Date	Time	No. of pupils

TOPIC : Set concepts

SUB TOPIC : Universal set

COMPETENCES : The learner;

- Defines universal sets
- Describes universal set
- Lists elements of the universal set

LANGUAGE : The learner;

- Reads, spells, pronounces and uses the key words correctly.

METHODS : Guide discovery, Brain storming, Discussion

SKILLS : Critical thinking, Creative thinking, Effective communication.

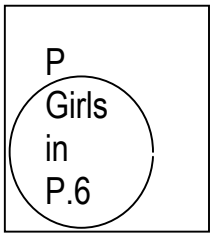
CONTENT : Universal set is a set of all members (elements) that belongs to the given set symbol ; " Σ "

Examples

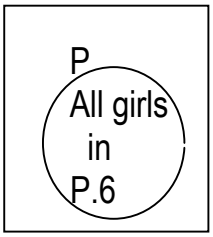
Given that Q = (all pupils in class 6) and P = (all girls in class 6)

a) Represent the information on a venn diagram

Q(Universal set) Σ =(All P.6 pupils)



Or



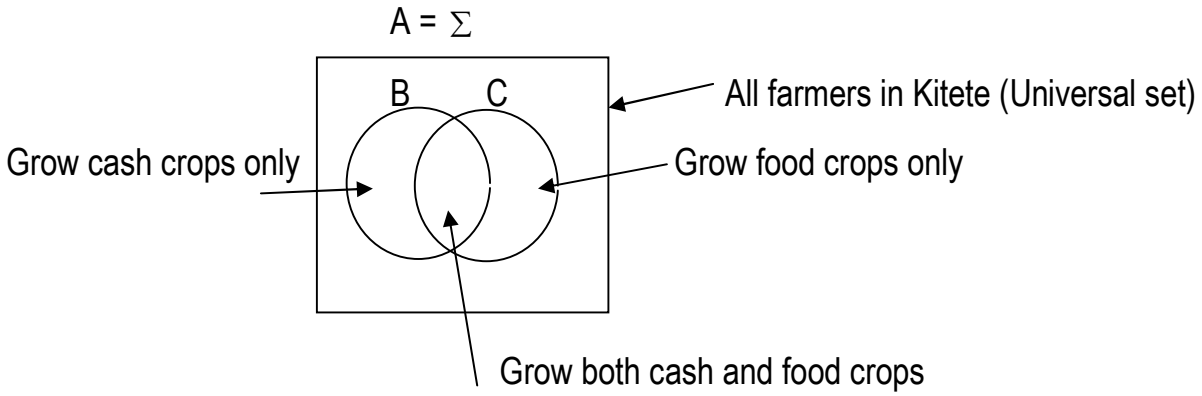
Given that;

A = (All farmers in Kitete village),

B=(Famers who grow cash crops in Kitete)

C= (Farmers who grow food crops in Kitete)

a) Represent this information on a venn diagram.



Activity

Draw a venn diagram for each of the following

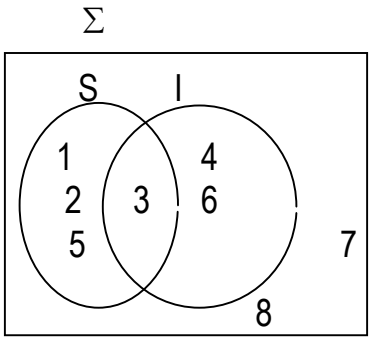
1. P=(all pupils in the class) , Q = (all boys in the class)

2. M = (all females in Jinja Town) , N = (All girls in Jinja town)

3. K=(all books in the library), L = (all Maths books in the library)

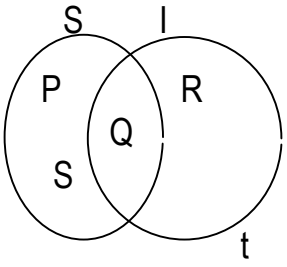
4. M= (All pupils in P.7) , P = (P.7 pupils who like Maths), Q = (P.7 pupils who like English)

5. X = (all football players), Y =(foot ball player who like right foot),
   Z=(foot ball players who like the left foot)

6. 

List the members of sets

a) ∑ b)A c) B

7. 

List the members of sets

i)6 ii)K iii)L

Date	Time	No. of pupils

TOPIC : Set concepts

SUB TOPIC : Complement of sets

COMPETENCES : The learner;

- Defines complement of sets
- Identifies elements of complement of sets
- Draw and shade regions of complement
- List elements in the regions of complement

LANGUAGE : The learner;

- Reads, writes, spells and pronounces complement, shade, identify

METHODS : Guide discovery, Group work

SKILLS : Creative thinking, Effective communication

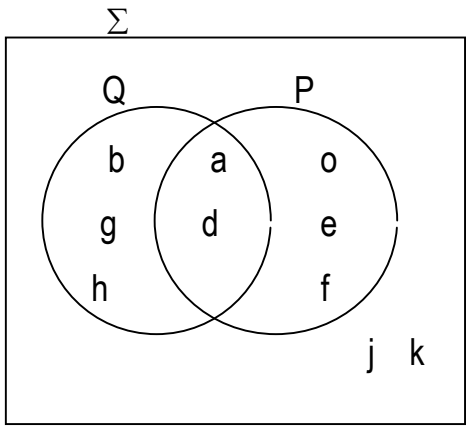
CONTENT : Complement of sets is a set of member of the universal set which do not belong to any of the given regions

Symbol ; " I " e.g. A^1, $(A \cap B)^1$

Examples

Given that (Σ)= (a,b,c,d,e,f,g,h,j,k) , Q= (a,b,d,g,h), P= (a,c,d,e,f)

Represent on the venn diagram

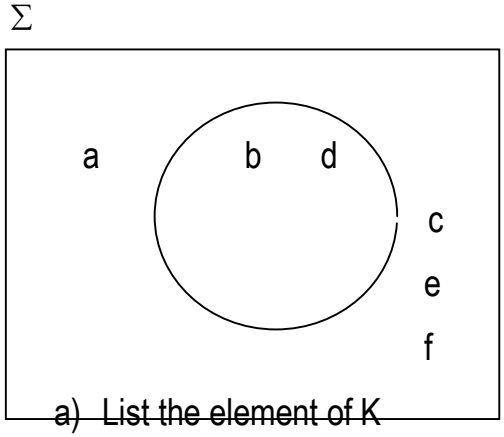


List the members of:-

a) Q only = (b, g, h)
b) P only = (c, e, f)
c) P $\cap$ Q = (a, d)
d) Q $\cap$ P= (b, c, e, f, g, h, j, k)
e) P $\cup$ Q = (j, k)
f) (Q) = c, e, f, j, k)
g) P1=(b, g, h, j, k)

Activity

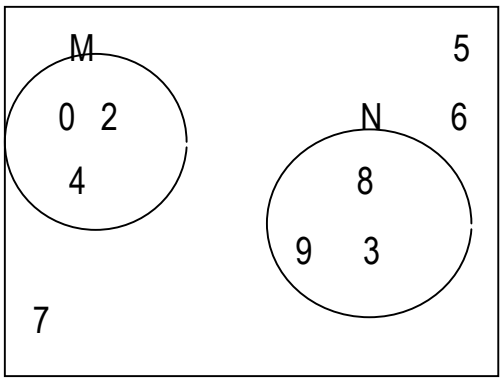
Study the given sets and answer the questions



a) List the element of K
b) List all the members in the universal set

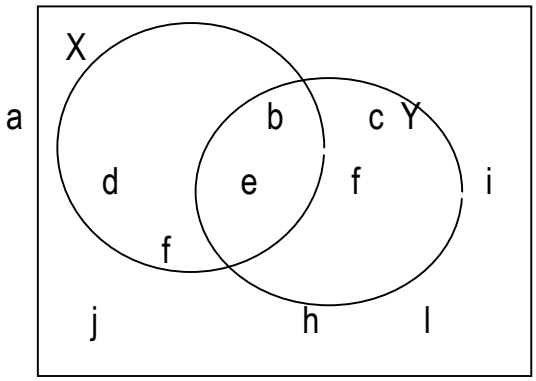
c) What is set K complement

Σ



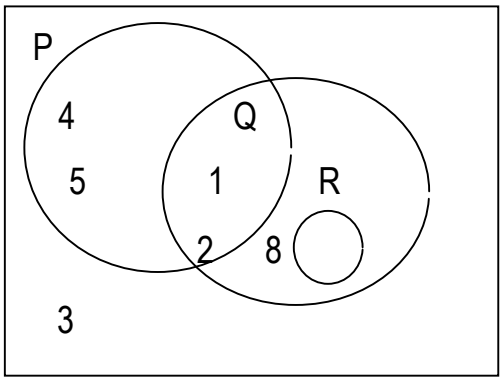
a) List all members in M
b) List all the elements in N
c) What is M complement?
d) What is N complement?
e) What is M∪ N complement?
f) List all the elements in the Universal set.

Σ



a) List all the elements in the Universal set.
b) List all the elements in X
c) List all the elements in Y
d) What is (X∩ Y)?
e) What is (X∩ Y) complement?
f) What is (X∪ Y)?
g) What is (X∪ Y) complement?

Σ



List the elements of

a) P
b) Q
c) R
d) $P \cap Q$
e) $R \cap Q$
f) $R \cup Q)^1$
g) $(Q \cup Q)^1$

Date	Time	No. of pupils

TOPIC : Set concepts

SUB TOPIC : Difference of sets

COMPETENCES : The learner;

- Identifies members in a given set
- Lists members under difference of sets in given sets.
- Describes shaded regions

LANGUAGE : The learner;

- Reads, spells, pronounces and writes the key words different, belong, found, not members.

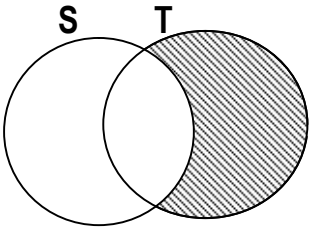
METHODS : Guided discussion, Group work, Discussion

SKILLS : Creative thinking, problem solving

CONTENT :

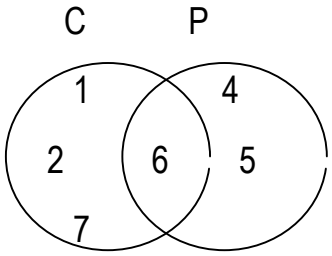
Examples

Describe the shaded region



Example II

Given that venn diagram below of set C and P

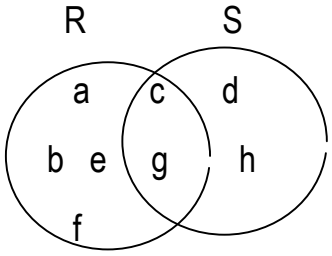


What is

a) C – P = (1, 2, 7)
b) P – C = (4,5)
c) N (P – C) = 2
d) N (C – P) = 3

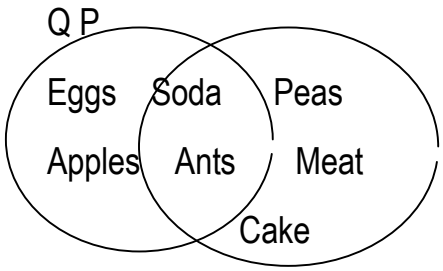
Activity

Study the given sets and list the member of the sets



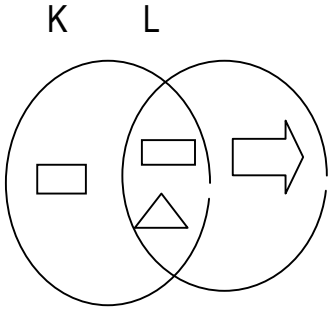
What is

a) R – S? S – R?
b) n(R – S)? n(S – R)?



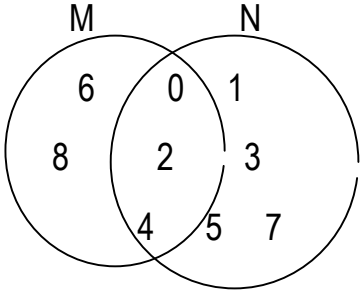
What is

a) P – Q?
b) Q – P?
c) n(P – Q)?
d) n(Q – P)/



What is

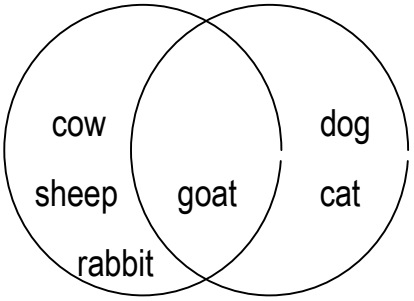
a) K – L
b) L – K
c) n(K – L)
d) n(L – K)



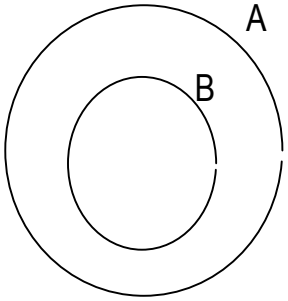
a) Shade N – M
b) What is N – M?

c) List the members of N – M
d) Find the elements of M – N.

a)



b)



a) Shade A – B
b) What is A – B?

Shade A – B in the diagram above.

6. Given that D = (Multiples of 3 less than 16) and F = (Odd numbers less than 16)
   a) List the members of D and members of F.
   b) Represent this information on the venn diagram.

Date	Time	No. of pupils

TOPIC : Set concepts

SUB TOPIC : Subsets

COMPETENCES : The learner;

- Describes a subset
- Forms subsets
- Writes the symbol of subsets
- Find the number of subsets

LANGUAGE : The learner;

- Reads, spells, pronounces and uses the new words: from, symbol, subsets.

METHODS : Guided discovery, discussion

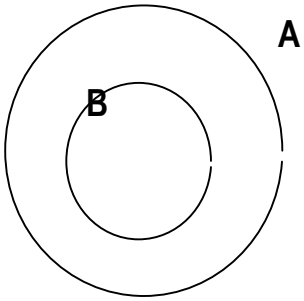
SKILLS : Creative thinking, problem solving , creative thinking

CONTENT : A subset is a small set got from another set (Universal set).

Symbol ; " $\subset$ "

Example 1

Describe set A and B



Set B $\subset$ A

Read as "B is a subset of A"

Examples

Date	Time	No. of pupils

TOPIC : Set concepts

SUB TOPIC : Intertection and Union sets

COMPETENCES : The learner;

- Defines inter section and union sets
- Identifies the elements of intersection and union set

LANGUAGE : The learner;

- Reads, spells, pronounces and writes the intersection and union sets

METHODS : Guided discovery, discussion

SKILLS : Creative thinking, problem solving

CONTENT : Intersection set is a set of elements common to two or more sets

Symbol ; " $\cap$ "