



BAL BHARATI PUBLIC SCHOOL, PITAMPURA, DELHI – 110034

CLASS V SUBJECT: MATHEMATICS TERM 2 (2020-21)

TOPIC – MEASURING SURFACES

SUBTOPIC – AREA

WEEK : 21.12.2020 to 24.12.2020

LEARNING OUTCOMES

Each child will be able to:

- ❖ observe area as the surface occupied by the region of any closed figure using tracing, drawing and painting activities.
- ❖ estimate area of different figures using units like finger/ thumb impressions or vegetable prints.
- ❖ define the unit of area in terms of square centimetre and square metre.

ENERGISER

Stretch both your arms pointing one of your fingers in front and try drawing: two **squares**, two **triangles** and two **circles** with both the fingers.

MEASURING SURFACE

If your parents want to put a new carpet in your room, how much carpet would they buy?

No idea, as we can't measure the surface of floor using a scale.



Ok children, now you draw the boundary of any object lying beside you (e.g. your notebook, book, eraser or pencil box) on a sheet of paper. Is it occupying some part of the sheet? The amount of surface occupied by the shape determines the region of that shape. Similarly, the carpet will occupy some surface of the floor which we need to measure.

The measure of the region of any closed figure gives its area.

So ,that means you need to find out the area of the floor which is to be covered by carpet.

Activity 1: BIGGER HAND

Can you guess who has the bigger hand; your father or mother?

Let's find out:

Material required: 1) A sheet of paper with hands of two family members traced on it.

2) Water colours

3) A vegetable with a shape cut out in it.

- Have you ever tried doing vegetable painting? It's fun. Let us have some fun and find out who has the bigger hand.
- Take your piece of vegetable, dip it in water colour and fill both the traced hands with the impressions of the vegetable. Remember to put the impressions as close as possible without overlapping.
- Now count the number of impressions in each shape and find out who has the bigger hand.

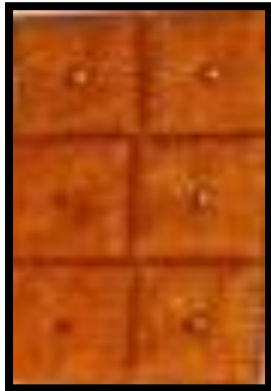
Q1. Estimate the area of the following figures by counting the number of units of the shape that completely fills it:-



Area = 49 Ladyfingers



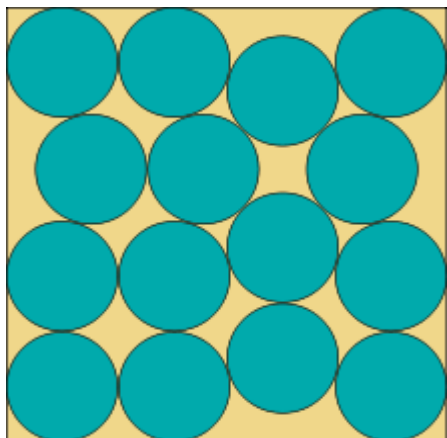
Area= ___ Ladyfingers



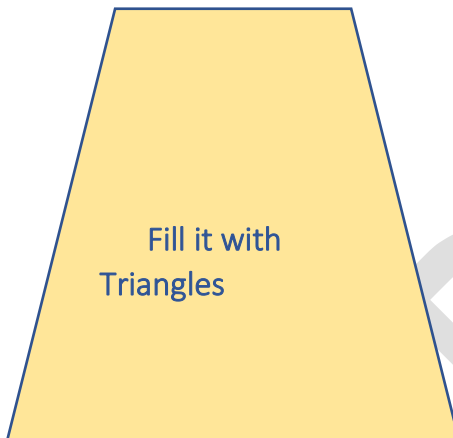
Area = ___ Cheesings

So, you can estimate the area of a given figure by counting the number of units of different shapes that fill it completely.

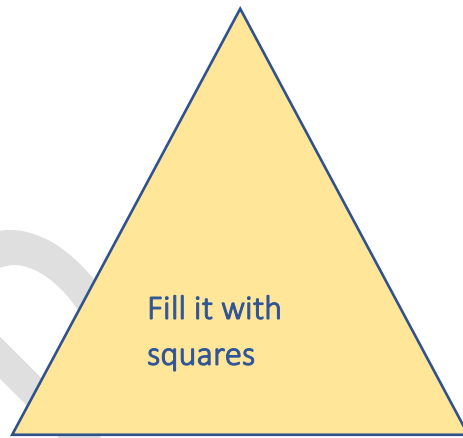
Q2. Look at the figures below and estimate the area of each figure in terms of the unit figures used to fill them. One is done for you:



Area = 15 circles



Area = _____ triangles



Area = _____ squares

Now check yourself and find out filling up with which figure you covered most of the area? **Or** which shape tessellates well with each other leaving no gaps in between?

Yes children, you are right. Squares tessellate the best. So, unit squares are used as standard unit of measuring area as they tessellate so well with each other leaving no gap in between.

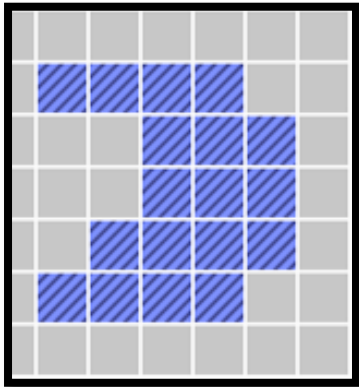
UNITS OF AREA

As you know that squares tessellate the best so we can find the area of the surface enclosed by a closed figure, by finding the number of complete unit squares inside the figure (drawn on a square sheet). If we know the area of a unit square filling the figure, we can find out the area of the given closed figure easily.

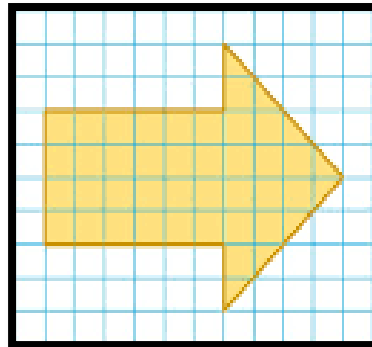
Square Centimetre:-

A centimetre square is a small unit which can be used to measure the area of the surface of small objects.

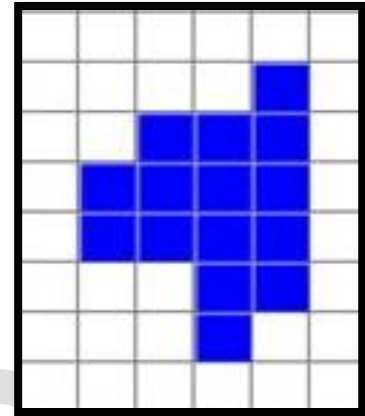
Q3. Find out the area of the following figures taking the area of each unit square as 1 square centimetre (1cm^2):



Area = _____ cm^2



Area = _____ cm^2



Area = _____ cm^2

LET'S HAVE FUN

Activity 2:

Find out the area of your handkerchief, eraser and pencil box in square centimetre (cm^2). Explore different ways.

Hint: You can put them on a graph paper, trace and count the number of squares inside the boundary.

Square Metre :

Square metre can be used as a unit of area to measure large areas like the floor of a room, a big piece of cloth etc.

Even bigger areas like area of a city can be measured in Square Kilometre.

So, Units of Area are mm^2 , cm^2 , m^2 , km^2 etc. (Depending upon the size of the surface to be measured) i.e. Square of Length units.

Q4. Which of the following units will Gauransh use to measure the area of the objects given below:

Square metre, square centimetre, square kilometre

- a) Area of a greeting card
- b) Area of a school land
- c) Area of the surface of a 500 rupee note
- d) Area covered by a city/village

FUN AT HOME

Activity 3:

Make your own metre square using a thick sheet of paper and find out the area of different rooms. Find out who has the biggest room?

Activity 4:

Make a shape or picture of the same size on some sheets of paper and give one sheet each to each member of your family to fill it up with vegetable prints. Each member fills up with different vegetable prints. Make sure that the prints do not overlap and minimum gap is left in between. Now each member finds out the area of the shape or picture in terms of the number of vegetable prints inside the shape. Check:

+ Is everyone getting the same area?

+ If not, why?

Discuss your observations in the next class.