



OzzieMaths  
Series



# Maths: Foundation



Sample

- ✓ number and place value
- ✓ patterns and algebra
- ✓ using units of measurement
- ✓ shape
- ✓ location and transformation
- ✓ statistics and probability

By Yolanda Cool

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# Teachers' Notes

By the end of the Foundation year, students need to be able to:

- Make connections between number names, numerals and quantities up to 10.
- Compare objects using mass, length and capacity.
- Connect events and the days of the week.
- Explain the order and duration of events.
- Use appropriate language to describe location.
- Count to and from 20 and order small collections.
- Group objects based on common characteristics and sort shapes and objects.
- Answer simple questions to collect information and make simple inferences.

Teaching Maths is about providing students with:

1. Key skills needed to solve Maths problems in the real world.
2. The chance to explore ways to find an answer and explain how it works.
3. Opportunities to problem solve.
4. The chance to use and apply their skills.
5. Real life opportunities.

A strong Maths program teaches:

- Number Sense and Operations – develops arithmetic and place value.
- Geometry and Spatial Sense - builds on knowledge of basic shapes, increases ability to reason spatially, visualise objects in space, read maps and eventually use geometry to solve problems.
- Data Analysis and Probability - uses charts, tables, and graphs to assist learning to organize information about the world around them.
- Algebra - learning to recognize patterns and sets (“pick the small pencil”) creates the groundwork for working with unknowns and algebraic variables.
- Measurement - learning how to measure and compare is an important life skill.

Remember that students can recite the number sequence (i.e. say one, two, three, etc.), but we cannot assume that they can count small sets of objects. With your class, make every day activities and events a counting exercise.

Learning to count involves learning the following important principles:

- The number name list is used in a fixed order every time a group of objects are counted (i.e. you have to say one, two, three, four in the same order each time).
- The last number name used gives the number of objects in the set.
- The arrangement of the objects to be counted does not affect how many there are.
- Each object to be counted must be given one and only one number name.
- The order in which the objects are counted doesn't matter. The child can start with any block and count them.

When teaching shapes you could introduce the topic:

- By reading a story.
- Then hold up individual shapes and discuss each shape.
- Get students to find things in the room that are shapes.
- Do the same for other shapes.
- Discuss how shapes can make up pictures- circles for a head, oval for a body, triangles for legs, rectangles for legs and smaller circles for eyes

Here are some suggested books, which you can use and develop activities around:

- *Ten Little Caterpillars* by Bill Martin Jr.
- *The Very Hungry Caterpillar* by Eric Carle
- *Ten Black Dots* by Donald Crews
- *One Duck Stuck: A Mucky Ducky Counting Book* by Rowellis Root
- *Counting Colours: Seek and Find* by Roger Priddy
- *1,2,3 to the Zoo* by Eric Carle
- *Circles* by Rose Griffith
- *Shapes* by Henry Pluckrose
- *Triangles and Pyramids* by Sally Morgan
- *Squares and Cubes* by Sally Morgan
- *Circles and Spheres* by Sally Morgan
- *Take Off With Shapes* by Sally Lewitt
- *Inch by Inch* by Leo Lionni
- *One, Two, Three* by Tom Stlaughter
- *Doggies* by Sandra Boynton
- *One, Two, Three* by Sandra Boynton
- *How Do Dinosaurs Count To Ten?* by Jane Yolen and Mark Teague
- *Zin! Zin! Zin! A Violin* by Lloyd Moss
- *How Many Bugs In A Box?* By David A Carter
- *Anno's Counting Book* by Mitsumasa Anno
- *The Water Hole* by Graeme Base
- *One To Ten Pop-Up Surprises* by Chuck Murphy
- *10 Minutes To Bedtime* by Peggy Rathmann

# Curriculum Links

## **NUMBER AND ALGEBRA**

### Number And Place Value

Establish understanding of the language and processes of counting by naming numbers in sequences, initially to and from 20, moving from any starting point (ACMNA001)

Connect number names, numerals and quantities, including zero, initially up to 10 and then beyond (ACMNA002)

Subitise small collections of objects (ACMNA003)

Compare, order and make correspondences between collections, initially to 20, and explain reasoning (ACMNA289)

Represent practical situations to model addition and sharing (ACMNA004)

### Patterns And Algebra

Sort and classify familiar objects and explain the basis for these classifications. Copy, continue and create patterns with objects and drawings (ACMNA005)

## **MEASUREMENT AND GEOMETRY**

### Using Units Of Measurement

Use direct and indirect comparisons to decide which is longer, heavier or holds more, and explain reasoning in everyday language (ACMMG006)

Compare and order duration of events using everyday language of time (ACMMG007)

Connect days of the week to familiar events and actions (ACMMG008)

### Shape

Sort, describe and name familiar two-dimensional shapes and three-dimensional objects in the environment (ACMMG009)

### Location And Transformation

Describe position and movement (ACMMG010)

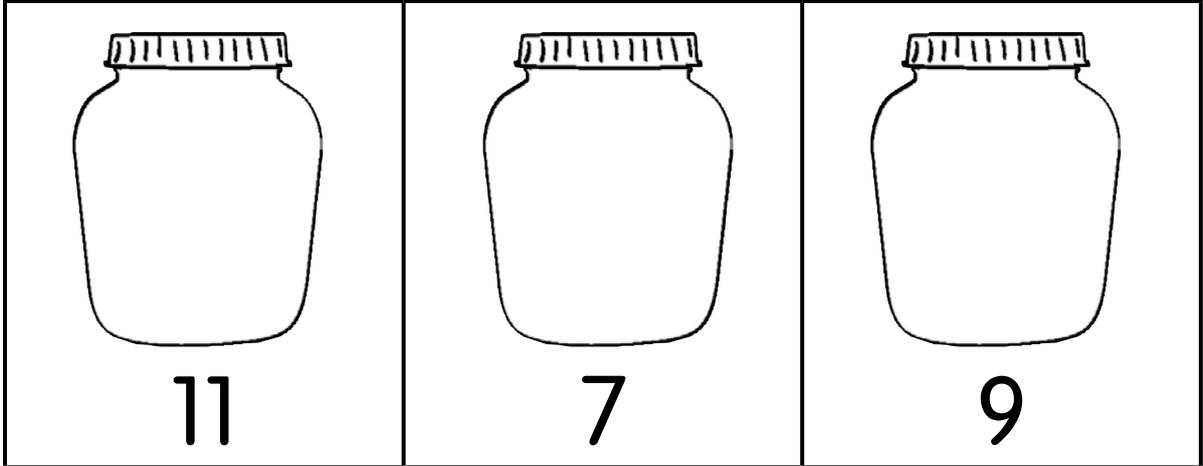
## **STATISTICS AND PROBABILITY**

### Data Representation And Interpretation

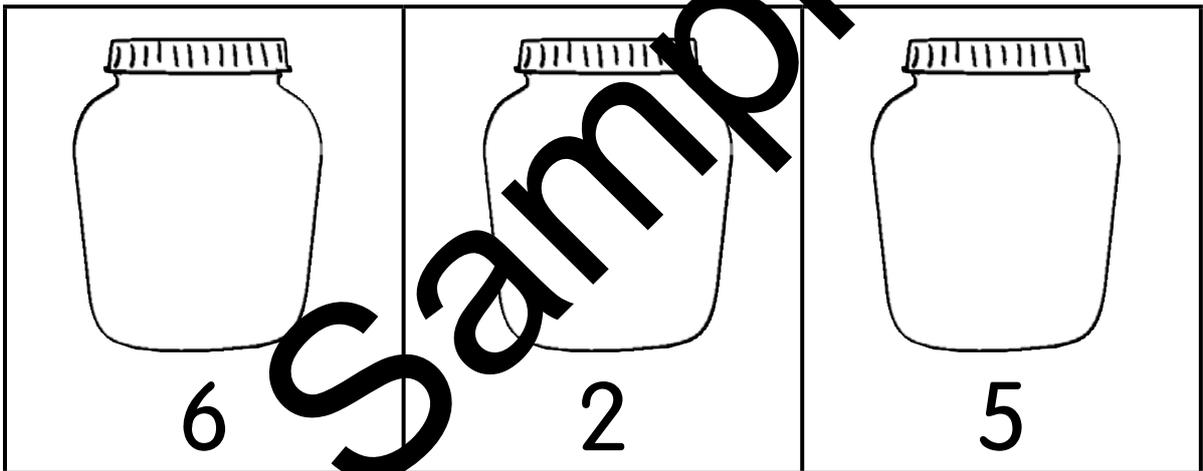
Answer yes/no questions to collect information and make simple inferences (ACMSP011)

# Do some counting

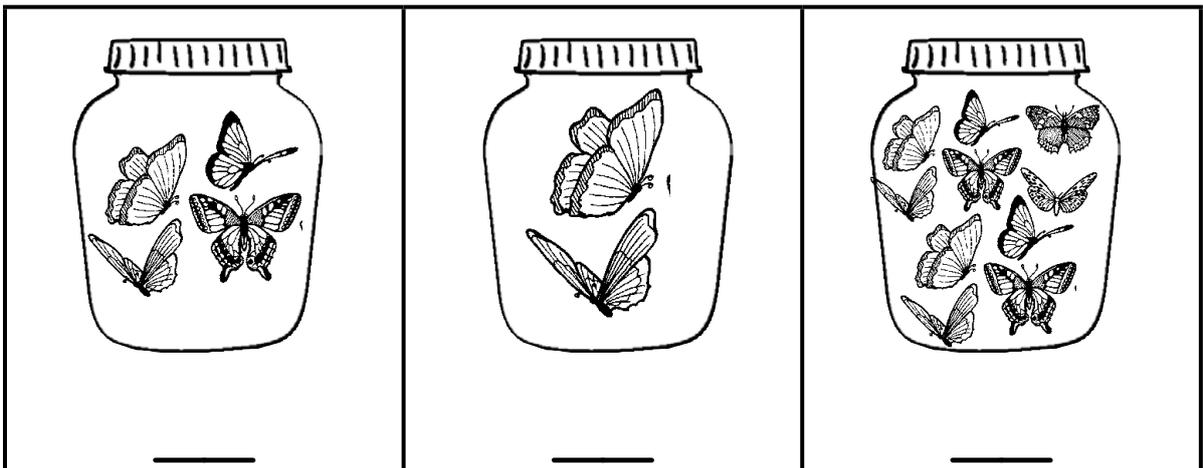
1. Draw **lollies** in the jars to match the numbers.



2. Draw **marbles** in the jars to match the numbers.

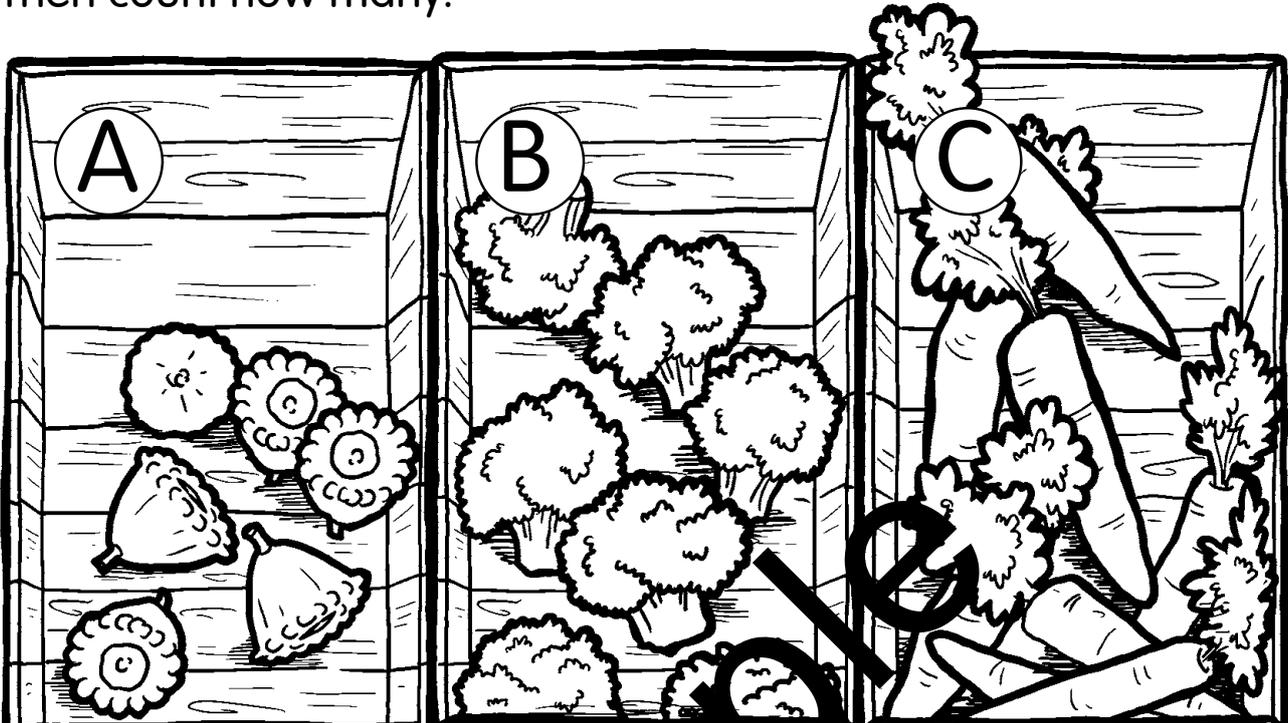


3. Write how many **butterflies** are in each jar.



# Subitise

Guess how many vegetables are in each box without counting.  
Then count how many.

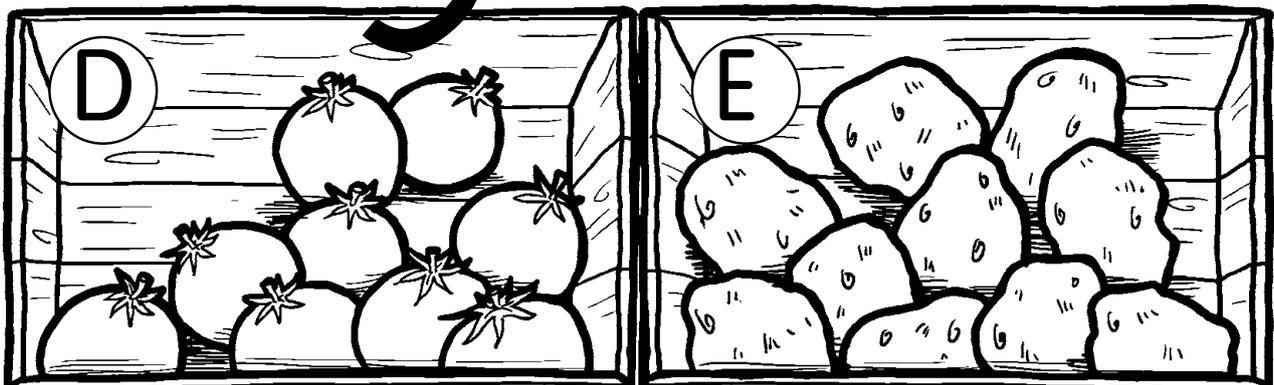


Box A contains 7 mushrooms. Box B contains 8 heads of broccoli. Box C contains 5 carrots.

Guess: \_\_\_\_\_  
Count: \_\_\_\_\_

Guess: \_\_\_\_\_  
Count: \_\_\_\_\_

Guess: \_\_\_\_\_  
Count: \_\_\_\_\_



Box D contains 8 tomatoes. Box E contains 12 potatoes.

Guess: \_\_\_\_\_  
Count: \_\_\_\_\_

Guess: \_\_\_\_\_  
Count: \_\_\_\_\_

# Basic shapes

Draw lines or use colours to match the words with the shapes.

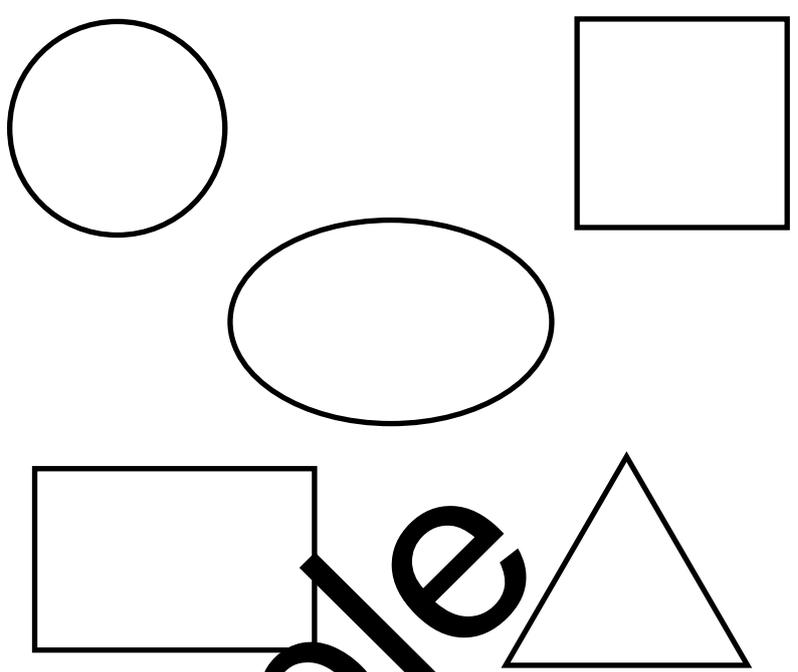
circle

square

triangle

rectangle

oval



A large, diagonal watermark reading "Sample" is overlaid on the shapes.

Colour the shapes in the picture below.



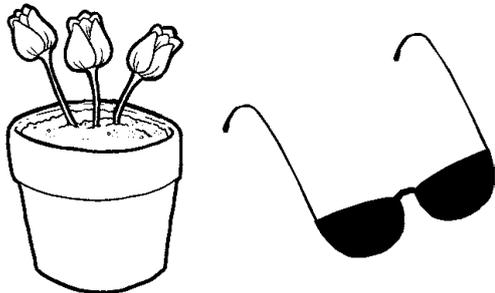
circles = yellow      hearts = blue      ovals = orange

triangles = green      rectangles = red

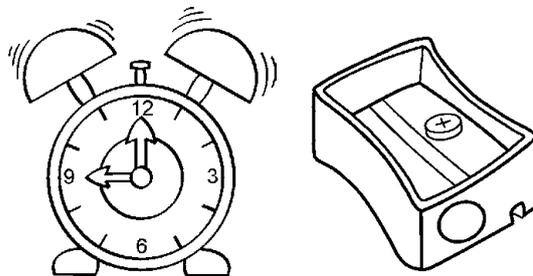
# Weight

Circle the object that you think would be the heaviest.

1.



2.



3.

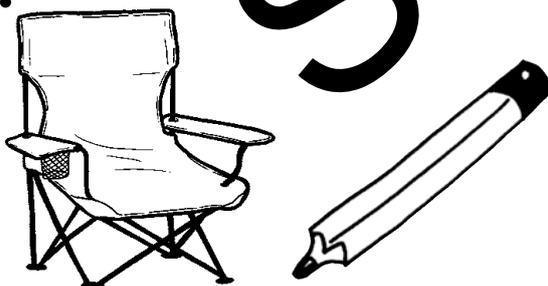


4.

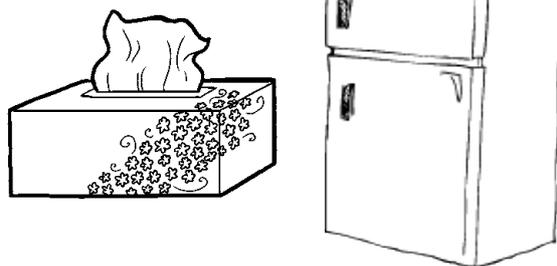


Circle the object that you think would be the lightest.

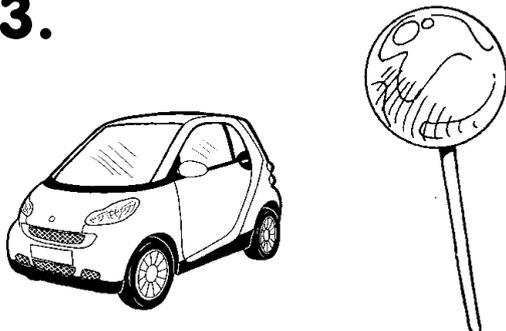
1.



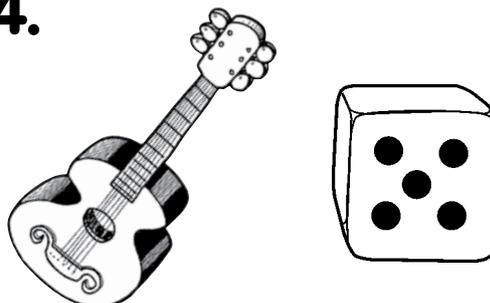
2.



3.



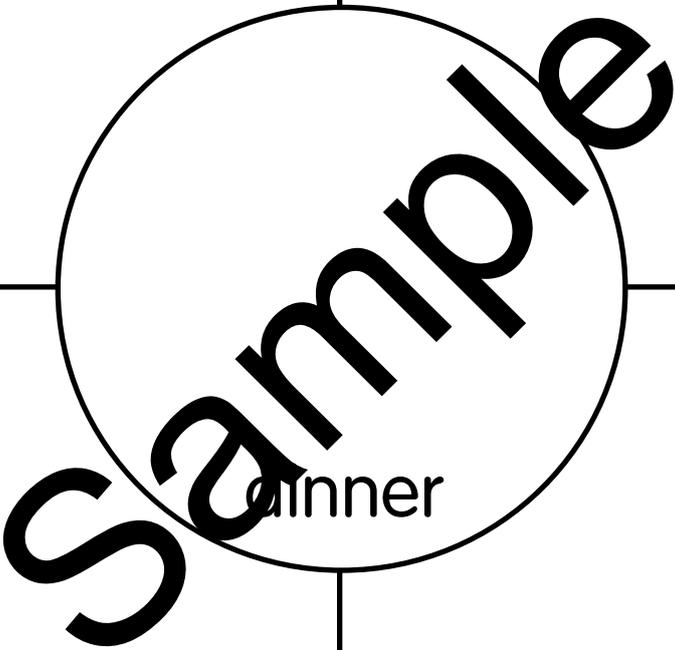
4.



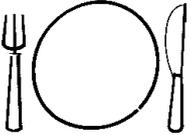
# Times of the day

Copy the times correctly onto the place mat.

7am	10am	12am	2pm	5pm
-----	------	------	-----	-----

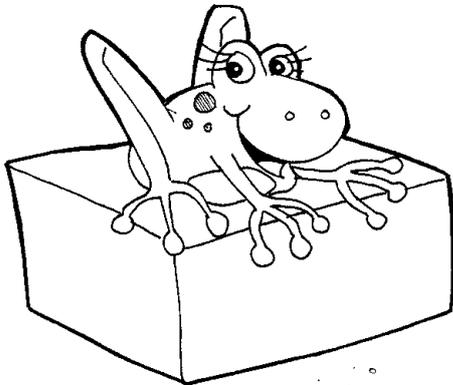
breakfast	morning snack
	
lunch	afternoon snack

Copy the names of the foods correctly onto the place mat.

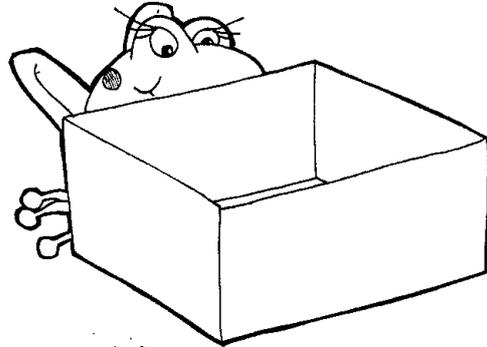
 fruit	 biscuit	 pasta and peas	 sandwich	 cereal
--	--	--	--	---

# What is the frog doing?

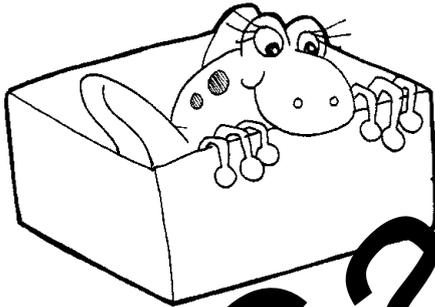
Circle the words that tell us about the frog.



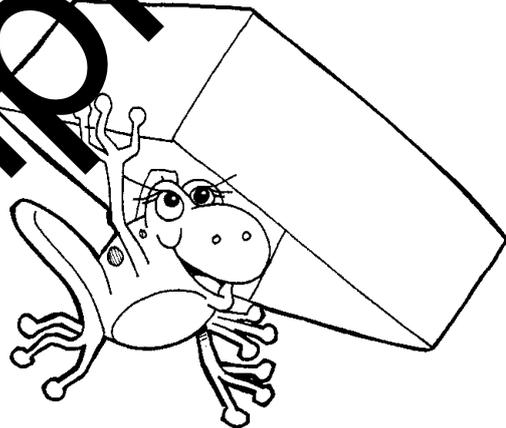
on      off



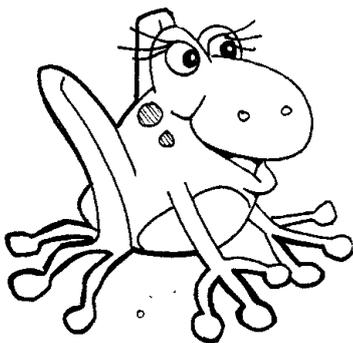
in front      behind



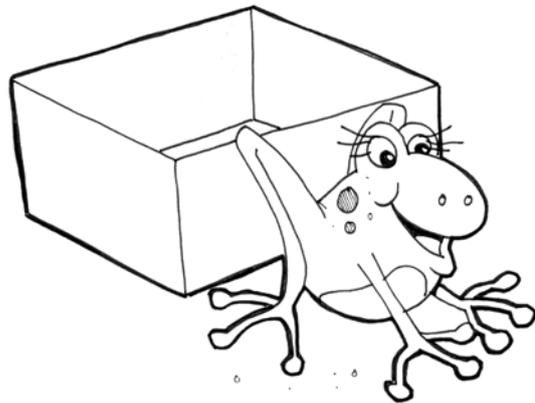
in      out



above      below



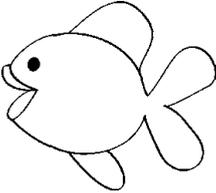
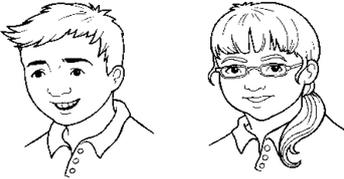
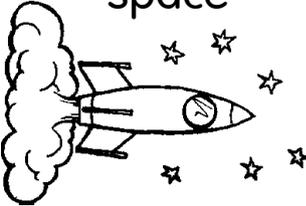
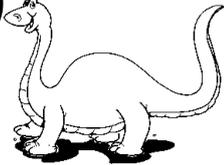
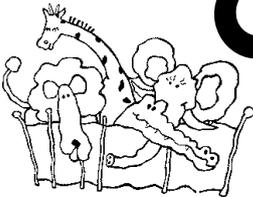
near      far



beside      beneath

# Data

Ask members in the class if they like learning about:

<p>fish</p> 		<p>people</p> 		<p>birds</p> 	
Yes	No	Yes	No	Yes	No
<p>space</p> 		<p>places</p> 		<p>dinosaurs</p> 	
Yes	No	Yes	No	Yes	No
<p>animals</p> 		<p>sport</p> 		<p>computers</p> 	
Yes	No	Yes	No	Yes	No

What is the least popular topic? \_\_\_\_\_

What is the most popular topic? \_\_\_\_\_

Are there any two topics that are equally popular? \_\_\_\_\_