1. Name the prism.

a) square-based prism

b) triangle-based prism

c) rectangle-based prism

d) triangle-based prism

2. Name the prism you could make with each base. Describe each prism by telling how many faces, edges, and vertices it has.

a) rectangle-based prism with 12 edges, 6 faces, and 8 vertices

b) pentagon-based prism with 15 edges, 7 faces, and 10 vertices

3. Circle the letter of the shape that is a prism. Tell how you know that you have chosen the correct shape.

A. B. C. D.

For example, D has 2 congruent bases and all the other faces have 4 sides.
1. Name each shape. Use the names in the box.

   A cube
   B triangle-based prism
   C square-based pyramid
   D hexagon-based prism
   E rectangle-based prism
   F square-based prism
   G hexagon-based pyramid
   H triangle-based pyramid

2. a) What do shapes B and H have in common? Both pyramids and several triangle faces
   b) What do shapes C and G have in common? Triangles for bases

3. Write the letters of all the shapes that fit each description.
   a) have at least 1 triangle face B, C, G, H
   b) base is square A, C, F
   c) all faces are triangles H
   d) all faces are rectangles or squares A, E, F

At-Home Help

A pyramid is a 3-D shape with 1 flat base. The other faces are triangles that meet at a vertex.

Square-based pyramid

Review the definition of prism in the At-Home Help on page 84.
Using Nets for Rectangle-Based Prisms

Goal: Build rectangle-based prisms from nets.

You will need scissors, a ruler, and tape.

1. a) Trace this net.
   Draw solid lines where there are solid lines.
   Draw dashed lines where there are dashed lines.

   b) Cut out the net along the solid lines.

   c) Fold along the dashed lines.

   d) Tape the edges.

   e) Name the 3-D shape you built. rectangle-based prism

At-Home Help
A net is a flat shape that folds to create a 3-D shape.

a net for a square-based prism
Goal
Build a structure with 3-D shapes.

You will need boxes, cans, scissors, and tape.

1. a) Find 3-D shapes that you could use to build a structure.

b) Plan a structure that you can build with some of the 3-D shapes you found.

c) Build your structure. Use tape if necessary.

d) Sketch your structure on the right side of this page.

e) Describe your structure using math language.

   Answers will vary.

f) Explain how you built your structure.

   Answers will vary.
Estimating and Measuring Capacity

Goal
Estimate and measure the amounts containers can hold.

You will need water, a measuring cup marked in millilitres and empty containers of different sizes.

1. Which unit would you use to measure the capacity of each container: litres or millilitres?
   a) swimming pool ________ litres ________
   b) pop can ________ millilitres ________
   c) watering can ________ litres ________
   d) spoon ________ millilitres ________

2. Find a measuring cup marked in millilitres.
   How much does it hold? Answers will vary.

3. a) Find 5 different sizes of empty containers such as bowls, glasses, and pots. Record the containers in the chart below.
   
   b) Compare each container to your measuring cup and estimate the capacity of the container. Record your estimate in the chart below.
   
   c) Check your estimates. Pour water from the measuring cup into each container to fill it. Keep track of how many measuring cups you use. Record your measurement.

<table>
<thead>
<tr>
<th>Container</th>
<th>My estimate</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>cereal bowl</td>
<td>400 mL</td>
<td>500 mL</td>
</tr>
</tbody>
</table>

Answers will vary.

At-Home Help
Capacity is the amount a container will hold.
Capacity is measured in millilitres (mL) and litres (L).
1000 mL = 1 L
1. Julia has 3 different ice cream scoops: 200 mL, 100 mL, and 50 mL.

a) What possible amounts of ice cream can be measured without refilling the scoops?

<table>
<thead>
<tr>
<th>Combination</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 scoop 200 mL</td>
<td>200 mL</td>
</tr>
<tr>
<td>1 scoop 100 mL</td>
<td>100 mL</td>
</tr>
<tr>
<td>1 scoop 50 mL</td>
<td>50 mL</td>
</tr>
<tr>
<td>2 scoops 200 mL + 100 mL</td>
<td>300 mL</td>
</tr>
<tr>
<td>2 scoops 200 mL + 50 mL</td>
<td>250 mL</td>
</tr>
<tr>
<td>2 scoops 100 mL + 50 mL</td>
<td>150 mL</td>
</tr>
<tr>
<td>3 scoops 200 mL + 100 mL + 50 mL</td>
<td>350 mL</td>
</tr>
</tbody>
</table>

b) What possible sizes of ice-cream cones can be made if there are 2 scoops in each cone? You can refill scoops.

<table>
<thead>
<tr>
<th>Combination</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 scoops same 200 mL + 200 mL</td>
<td>400 mL</td>
</tr>
<tr>
<td>2 scoops same 100 mL + 100 mL</td>
<td>200 mL</td>
</tr>
<tr>
<td>2 scoops same 50 mL + 50 mL</td>
<td>100 mL</td>
</tr>
<tr>
<td>2 scoops different 200 mL + 100 mL</td>
<td>300 mL</td>
</tr>
<tr>
<td>2 scoops different 200 mL + 50 mL</td>
<td>250 mL</td>
</tr>
<tr>
<td>2 scoops different 100 mL + 50 mL</td>
<td>150 mL</td>
</tr>
</tbody>
</table>
Estimating and Measuring Mass

Estimate and measure the masses of objects.

1. Which would you use to measure the mass of each item: grams or kilograms?
   a) a watermelon __________ kilograms
   b) a toothbrush __________ grams
   c) a bag of popcorn __________ grams
   d) a wagon __________ kilograms

2. Find several full containers that are measured in grams or kilograms. Dry items, such as bar soap, cereal, bread, rice, nuts, and other snack foods usually have mass units. (The mass of the packaging is not included in the mass given.)

3. a) Find 5 objects of different sizes without any masses given. You can use, for example, a shoe, a book, a toy, a plate, a cushion, or a can of pop. Record the items in the chart below.

   b) Compare each object to the items you found in Question 2 and estimate the mass of the object. Record your estimates in the chart below.

<table>
<thead>
<tr>
<th>Item</th>
<th>My mass estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dad’s shoe</td>
<td>500 g</td>
</tr>
<tr>
<td>Answers will vary.</td>
<td></td>
</tr>
</tbody>
</table>

4. Take 1 or 2 of the objects from Question 3 to school tomorrow. Measure their masses to check your estimates.
Test Yourself

Circle the correct answer.

1. Which prism could be made with this base?
   - A. rectangle-based prism
   - **B. pentagon-based prism**
   - C. square-based prism
   - D. triangle-based prism

2. Which statement is **not** true about prisms?
   - E. Prisms are named from the shape of their bases.
   - F. The bases are always congruent.
   - **G. The faces that are not bases are all different.**
   - H. Prisms can be made by stacking the same shape.

3. What is true about all pyramids?
   - A. They have some triangle faces.
   - **B. They have more than 5 faces.**
   - C. They have exactly 1 vertex.
   - D. They have 1 square base.

4. Which net would build this shape?
   - E. [Net E]
   - F. [Net F]
   - G. [Net G]
   - **H. [Net H]**

5. Which capacity best describes a small juice box?
   - A. 200 L
   - B. 200 mL
   - **C. 2 L**
   - D. 2 mL

6. There are 3 sizes of pails: 1 L, 2 L, and 5 L. Which is **not** a possible amount that can be carried in 2 pails of different sizes?
   - **E. 8 L**
   - F. 7 L
   - G. 6 L
   - H. 3 L

7. Which mass is the most reasonable for a textbook?
   - A. 20 kg
   - B. 30 g
   - **C. 2 kg**
   - D. 200 g