1. Ratio & Proportion

Materials: colored linking cubes
envelope: "Ratio"
envelope: "Classifying Ratios"

1. Use the cubes to construct three different towers that represent a ratio of 3:2:4
Draw to record your constructions and explain your work.

2. Look in each envelope and record the ratio that you find in each one.

3. Find the container labelled "Classifying Ratios". Sort the cards and then record the ones that belong together. Explain your reasons for each classification.

4. Calculate the ratio of time that you spend in school in a week with the ratio of time that you spend out of school.

5. In December 1995, the cost of Slurpees was as shown below. Explain whether the size and the price of the Slurpees represent a proportional situation.

SLURPEES

size	cost
0.275 L	59¢
0.5L	79¢
0.625L	89¢
1 L	99¢

When you have completed this station,
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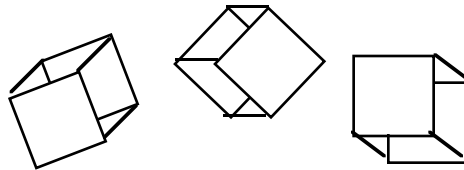
2. Ratio & Proportion

Materials: bag with cm cubes

1. **In your notebook, draw the following table.**

red	blue	black

2. **Without looking in the bag pick a cube and record the color on your chart. Return the cube to the bag.**

3. **Continue this process until you can the determine the ratio of red:blue:black.**

4. **Estimate the number of cubes of each colour.**

5. **Suppose there are 60 cubes in the bag, how many of each colour will there be?**

6. **Suppose you double or triple the total number of cubes in the bag. How will this affect the ratio of each colour?**

7. **Open the bag to count the cubes. Compare these findings with your above answers.**

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3. Ratio & Proportion

Materials: cards with sale items
ruler
protractor
calculator

1. a) **Look carefully at the cards. Record those items that are sold in multiples Choose three samples.**

b) **Make a chart to show the following:**

Number in package								
Cost of package								

c) **List five equivalent ratios from the chart.**

d) **In your own words define the meaning of equivalent ratio**

2.   a) **The angles of a triangle are in the ratio 2:3:5. Draw three triangles that have this ratio; one having a side of 2, and the second a side of 4 and the third a side of 6.**

b) **Write the ratio of the sides of each triangle. Explain why we call these equivalent ratios.**

c) **Measure the angles in each case. What can you say about similar triangles?**

4. List 3 ratios that are equivalent to 6:24.
Can you find one where the sum of the terms is 120?

5. Change the following ratio to lowest terms and illustrate with a diagram.

$$18:30:24$$

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4. Ratio & Proportion

Materials: watch with a second hand

1. Find your pulse and count the number of heart beats in 15 seconds. Explain how you can use this information to calculate your heartbeat in one minute.

2. At this rate, how many times does your heart beat in one day? To calculate this answer, what assumptions do you have to make?

3. a)   When your heart beats, blood is pumped to your body. If 0.006 litres of blood is pumped each time your heart beats, how many litres are pumped in one day?

   b)   State several factors that could affect these predictions.

   c)   At this rate, approximately how many litres of blood does your heart pump in one year?

   d)   Explain how you estimated.

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5. Ratio & Proportion

Materials: flyers and advertisements

1. a)   **Suppose you have $1 000. Select at least two items from the flyers that total close to $1 000.**

   b)   **Explain how you would calculate the GST and PST? Calculate the total cost with taxes.**

   c)   **Do you have enough money to pay for the items you selected?**

2. a)   **Suppose a store has the following advertisement:**

> **Save GST and PST on all items
> from 7:00 am to 8:00 am
> Saturday, December 20**
>
> **That's right . . .
> We pay the GST and PST for you!!!**

   b)   **Select two items and total your savings!**

3. **Here is a receipt from the above sale. Why does the customer pay less than the actual cost of the item?**

> *Bargains Galore!*
>
> **New AGE Microwave 199.99**
> **PST 7%**   **14.00**
> **GST 9%**   **18.00**
>
>   **Total:**   **231.99**
>
> **GST PST rebate**   - 37.12
>
>   **TOTAL**   **194.87**

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6. Ratio & Proportion

Materials: cards with scale drawings
                   road maps

1.   **Look carefully at the drawings on the cards.
     Determine the scale that was used and state whether the
     drawing is an enlargement or a reduction.**

2.   a)   **Look in atlases, road maps, etc. and find 10 different
          scales. Name the map and state the scale used in each
          case.**

     b)   **Why do we use different scales for different maps?**

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7. Ratio & Proportion

Materials: Real Estate Ads

1. Search the newspapers for advertisement for homes.

2. Find 5 that you would like. Cut these out and paste them on a sheet of paper.

3. Give at least one reason why you chose each one.

4. If the realtor selling these homes receives a commission of 2 1/2 %, how much would he make on each of the homes you chose?

5. Suppose he sold all 5 homes in one month, what would his income be for the month?

6. State several advantages and disadvantages of working on commission only.

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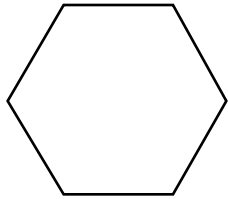
8.   Ratio & Proportion

Materials: measuring tools
                   calculator
                   large graph paper
                   architect blueprints (optional)

1. **Choose an area that interests you. This may be the gym, a basket ball court. your classroom, etc.**

2. **Measure all the dimensions you need to make a scale drawing of your area. List these neatly in a chart. Calculate an appropriate scale that would allow you to draw the area on the graph paper.**

actual size	reduced size

3. **Make your drawing, label carefully and indicate your scale.**

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9.   Ratio & Proportion

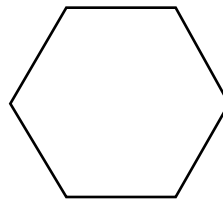**Materials:**   picture
              computer draw program (optional)

1. Ask your teacher to help you make two to three copies of a picture using the photocopier at reduced or enlarged sizes.

2. Paste these on a sheet of paper, measure and discuss how each particular size change affected the size of your picture.

3. What scale do you use to double your picture on the machine at your school?

4. What scale do you use to make your picture one quarter of the size on the machine at your school?

5. Michelle drew a hexagon with the draw program on her computer. She thought it was not large enough so she used the scale option to enlarge it.

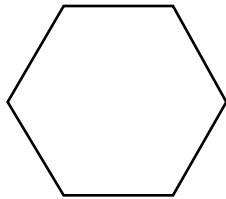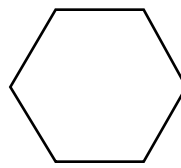**a)   She used 100% and much to her surprise her picture was the same. What happened?**

original   **100%**

b)   Once she figured it out she decided to try 80%. Her picture was smaller. What happened?

original   **80%**

c)   What does she need to do to double her picture?

d)   If you have a draw program, try to demonstrate how pictures. drawings, and letters can be altered in size. Print your work.

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