1. Algebra

Materials: dice
                 calculator

1.   **a)**   **Roll the dice and multiply the two numbers.**

    b)   **Replace the variable in the following expression
with the product that you get.**

$$2n + 9 \ =$$

    c)   **Roll again and evaluate the expression by using this new
number.**

    d)   **Evaluate 2n - 9 when n=0 and when n=1**

2.   **a)**   **Repeat the above procedure for each of the following.**
    b)   **Roll and multiply the two numbers in order to get
a value for the variable.**
    c)   **Evaluate the expression each time.**

    i) $3v - 2 =$ **ii)** $4m - 3m + 6 =$

    iii) $2(l + w)$ **iv)** $xy + 2x + 3y =$

3.   **Use the calculator to evaluate these expressions:**

    a) $3x \ + \ 2\frac{1}{2}$ **if $x = 5\frac{1}{3}$**

    b) $2.3a \ - \ 4.5b \ =$ **if a = 3.1 and b = 1.2**

4.   **We write 3 x n as 3n so is it correct to write 3 x 2 as 32?
Explain your answer.**

5.   **In your own words explain what an expression is.
In your explanation use the words variable and constant.**

When you have completed this station,
place your answer sheet in your portfolio.
Label your portfolio entry.
Please tidy up the station.

2. Algebra

Materials: paper
                   ruler

1. a.   Make a tournament schedule to show how many games the champion will play if there are 8 teams competing in a single elimination tournament.

When you have completed this station,
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Label your portfolio entry.

Please tidy up the station.

3. Algebra

Materials: cubes

A rectangular prism 2 x 3 x 4 of white cubes is painted blue on the outside surface area. It is then cut up into 24 equal sized cubes.

1.   How many of the cubes have:

    a.   exactly one face painted blue?

    b.   exactly two faces painted blue?

    c.   exactly three faces painted blue?

    d.   exactly four faces painted blue?

    e.   have all faces white?

When you have completed this station,
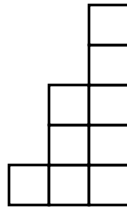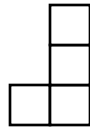place your answer sheet in your portfolio.
Label your portfolio entry.

Please tidy up the station..

4. Algebra

Materials: cubes

1.

1. Use cubes to copy and extend each model up to the fifth one in the series.

2. Develop a chart to record and reveal number patterns.

3. Explain how the pattern grows.

4. Write an open number expression to show your pattern.
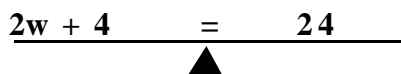
5. Algebra

Materials: calculator
algetiles

1. Give step by step instructions on how to solve the following equation by comparing it to using algetiles on a balance scale.

$$2w + 4 \quad = \quad 24$$

▲

2. Kim says: "There, I'm finished and handed in the following quiz. It sure didn't take very long to do those four questions.

Kim worked a little too quickly and made little errors in each one. Find the errors and explain why they are errors.

a) $3x + 1 = 36$
$ 3x = 36$
$ x = 12$

b) $4y - 2 = 14$
$ 4y = 12$
$ y = 48$

c) $\dfrac{a}{2} = 16$
$ a = 8$

d) $4a - 3 = 33$
$ 4a = 36$
$ a = 8$

Write a sentence or two to give Kim some advice about writing quizzes.

3. Dan says that he has been doing "algebra" since grade one because he used to calculate $2 + \square = 6$. Now he is simply replacing the box by a letter to indicate a number.
Do you agree or disagree? Explain your thinking.

When you have completed this station,
place your answer sheet in your portfolio.
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Please tidy up the station.

6. Algebra

Materials: marbles
                 equal arm balance

1.   a.   **Experiment to find out how many grams are needed to balance different numbers of marbles.**

     b.   **Record as a chart.**

     c.   **Write an equation to show the relationship.**

2.   **An expression for the mass of two cans and five marbles is 2c + 5m. Find the total mass, if each can has a mass of 200 g and each marble has a mass of 75 g.**

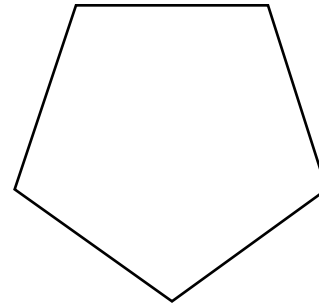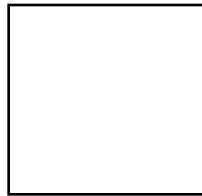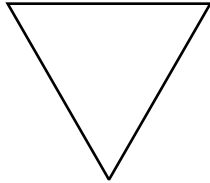When you have completed this station,
staple your cheque to your answer sheet and place both in your portfolio.
Do not forget to label your entry.

7. Algebra

Materials: calculator

1.   **Consider regular polygons.**

Their sides all measure 2 cm.

a)   **Make a chart to record their perimeter. Extend the chart to regular hexagons.**

b)   **Describe the pattern that you see on your chart.**

c)   **How is the perimeter related to the number of sides?**

d)   **Graph the results. In this case do you join the plots with a line. Why or why not?**

e)   **Write an expression to represent this relationship. How would the expression change if the length of all the sides was 5 cm?**

f)   **In what three ways can you predict the perimeter of these regular polygons?**

When you have completed this station,
staple your cheque to your answer sheet and place both in your portfolio.
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