That Takes the Biscuit

You need ☑ square grid paper ☑ scissors (optional)

Activity

Jess, Brock, and Tyke are farm dogs. Every night, James, their owner, gives each of them a juicy bone and a dozen dog biscuits for supper.

One day, they notice that the shape of their biscuits has changed.

They put one of the new biscuits on top of the old biscuit, like this:

… and the other way round, like this:

1. Are the new Woof biscuits bigger or smaller than the old Barking Mad biscuits? Explain your answer. (You may need to draw a diagram.)

2. During the next few weeks, James buys all sorts of different-shaped biscuits for Jess, Brock, and Tyke to try. The dogs get very good at comparing the sizes of the different biscuits.

   How does each biscuit below compare to the size of the old Barking Mad biscuit? Each biscuit is the same thickness. (The dogs are onto that trick!)

a.

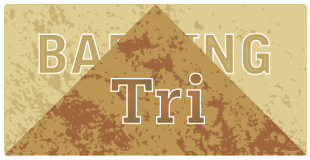
b.

c.

3. If the dogs could tell you how to compare the areas of rectangular- and parallelogram-shaped biscuits, what might they say?

4. One day, James gives each dog 12 triangular biscuits.

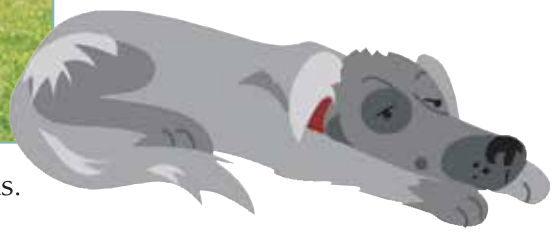
   a. How big is a Tri biscuit compared with a Barking Mad or a Woof biscuit?



   b. How do you know?

   c. Is it easier to compare the area of a triangular shape with a rectangle (the Barking Mad biscuit) or with a parallelogram (the Woof biscuit)? Explain your answer.

5. The next day, Jess, Brock, and Tyke round up only half of the sheep.



James realises he hasn't fooled the dogs with the Tri biscuits. He tries them on the biscuits shown below.

Compare the size of these shapes with Barking Mad biscuits. Are they bigger or smaller?

a.

b.

6. Use what you have learned from the dog biscuits shown here to draw the following shapes on square grid paper:

   a. 3 different parallelogram-shaped biscuits that each have an area of 48 squares

   b. 3 different triangular biscuits that each have an area of 24 squares.

7. Now draw a hexagon and an octagon that each have an area of 40 squares.

a.

Hex biscuit

b.

Oct biscuit