Honeycomb Cell Shape Investigation

Honeycomb Work Mat

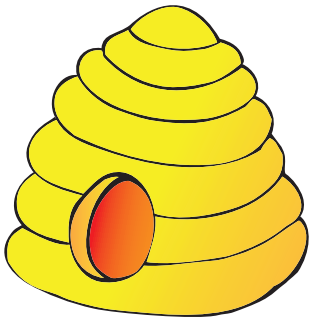
How would honeycomb cells of different shapes fit together in a hive?

Use the work mat below to experiment with different shapes, using pattern blocks or cut-outs and pennies/circular candies.

- Arrange as many shapes as you can in the space provided. Honeycomb cells are never a mixture of different kinds of shapes, so you must use only one type of shape at a time.

- Try to arrange the shapes with as little space between them as possible.

Place shapes within the boundaries of the work mat.
It's okay if a few edges stick out a little.



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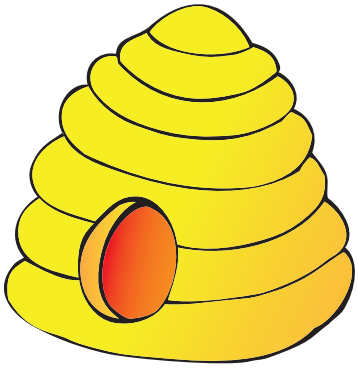
Observation Sheet



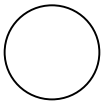
As you explore how shapes fit together on the work mat, you will use this worksheet to record what you observe.

In the boxes below, draw a representation of each of the shape arrangements that you create on the work mat. You can either make a free-hand sketch or repeatedly trace one pattern block/penny. Note: Your drawings might show fewer shapes than you arranged on your mat. That's okay! Just do your best to make your drawings reflect the patterns you arranged.

Observations could include the following:

- How the shapes fit together
- Patterns that you observe
- Discoveries that you make about the shape
- Evidence for efficient or inefficient use of the shapes
- Additional observations

Honeycomb With Circles



In the box below, draw what you observe when **circles** are used as a shape for a honeycomb cell:

Are there spaces between the shapes? Shade in the spaces.

Detailed Observations:

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Would a circle be a good shape for a honeycomb cell? Explain why or why not, and use your observations to support your thinking.

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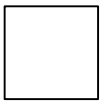

Honeycomb With Squares

In the box below, draw what you observe when **squares** are used as a shape for a honeycomb cell:

Are there spaces between the shapes? Shade in the spaces.

Detailed Observations:

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Would a square shape be good shape for a honeycomb cell? Explain why or why not, and use your observations to support your thinking.

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Honeycomb With Triangles

In the box below, draw what you observe when **triangles** are used as a shape for a honeycomb cell:

Are there spaces between the shapes? Shade in the spaces.

Detailed Observations

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How about triangles? Would a triangle be a good shape for a honeycomb cell? Explain why or why not, and use your observations to support your thinking.

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Honeycomb With Hexagons

In the box below, draw what you observe when **hexagons** are used as a shape for a honeycomb cell:

Are there spaces between the shapes? Shade in the spaces.

Detailed Observations:

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What about hexagons? Are hexagons a good shape for honeycomb cells? Explain why or why not, and use your observations to support your thinking.

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