



Tessellation Honeycombs

(Suggested Ages: 6+)

Gather

- Toilet paper tubes
- Scissors
- Tape or glue

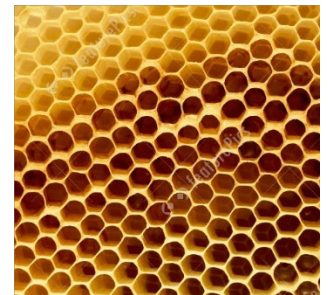


Let's Experiment!

1. Cut a toilet paper tube into 5 cross sections.
2. Fold the toilet paper tubes first in half, then make two more folds so that the tube is now a hexagonal shape instead of cylindrical. You may need to practice with a few toilet paper tubes first.
3. Use tape or glue to attach edges from two hexagons together. Then continue to attach them following the picture above.
4. You can explore which bees might be in the hive and build model bees to live in your honeycomb creation!

How Does it Work?

A honeycomb is actually made of round cells that are pressed together to form hexagons, forming what is called **tessellations**. A tessellation of hexagons is the most energy efficient way to create a pattern with the lowest surface area to volume ratio. This means the bees are spending the least amount of energy to create the wax comb (surface area) to fill with the most honey (volume). Learn more about tessellations and honey bees in the links below!



<https://www.natgeokids.com/au/discover/animals/insects/honey-bees/>
<http://www.tessellations.org/diy-basic2.shtml>

Take it Further!

Learn more about honey bees and how they compare to other bees by visiting:

<https://pestworldforkids.org/pest-guide/bees/>