



# High Touch High Tech®

Science Experiences That Come To You™

## Honeycomb Construction

### Supplies:

- Several strips of the template printed on cardstock
- 5-6 small paper clips
- Roll of scotch tape
- Markers or crayons

### Instructions:

1. You have several strips of cardstock with lines on it. They will each fold into a hexagonal honeycomb shape.
2. First spend a few minutes to decorate your honeycomb cells.
3. Fold each strip along the solid lines to form a hexagonal ring.
4. Use the tape to tape the last corner together. The honeycomb should have 6 sides and none of the sides should overlap.
5. Using the paper clips, join your honeycomb cells together to form a large piece of honeycomb. What different patterns can you make?.
6. Get creative and make different patterns and 3D configurations.

### The Science Behind it:

Social bees such as bumblebees and honeybees live in big groups. They build their own nests called hives in the ground or up in the trees. A honeybee nest is made up of many small cells built of beeswax. Each cell has a hexagonal shape with 6 sides and many cells are joined together to form a honeycomb. Some of these cells are filled with honey. Others contain stored pollen or become a nursery for eggs and larvae.

By working together, the bees can survive. What makes the hive come together so well is the uniform hexagonal shape of the honeycomb cells. You can see through this experiment how you could make a hive fit into any area simply by shuffling around the cells.

Why hexagons? Hexagons are the most efficient shape for engineering in this case. This shape is strong, does not leave gaps and uses the most efficient amount of wax and labor because each one is exactly the same.

