



The Hexagon and the Mechanical Intelligence of Bees

- ✓ Mathematics
- ✓ Mechanics
- ✓ Hands on activity





What is this shape?

The Hexagon:

- 6 edges
- 6 vertices

Can you show them?

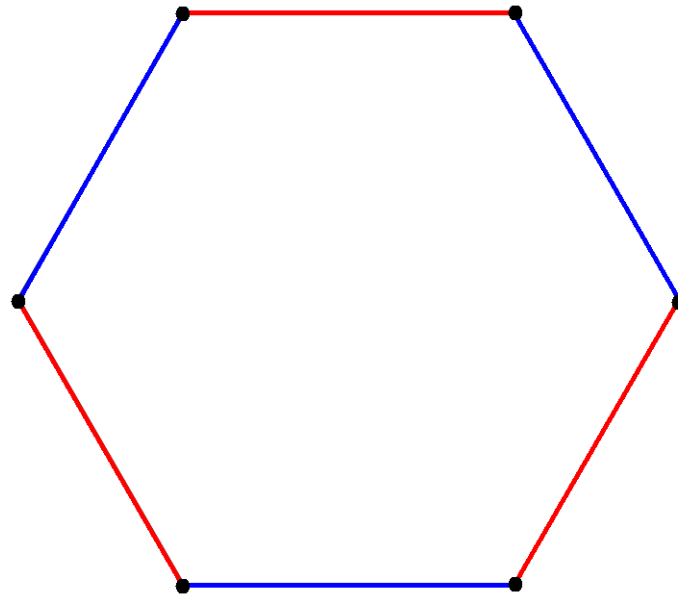


Photo by [Wikipedia](#)



THE HEXAGON IN NATURE

Bees create hexagonal cells from wax. These cells are called honeycombs. In them, they store honey and pollen, the queen gives birth, new bees are born and bred.



Photo by [Laboroflavor](#)



Trying to answer this question, scientists discovered the mechanical intelligence of bees.

Hexagonal cells give the colony more space, strength and stability than any other shape, while bees use less wax to make it.



Many engineers and architects drew inspiration from the mechanical intelligence of the bee and used

The hexagon in buildings, works of art, and even playgrounds!



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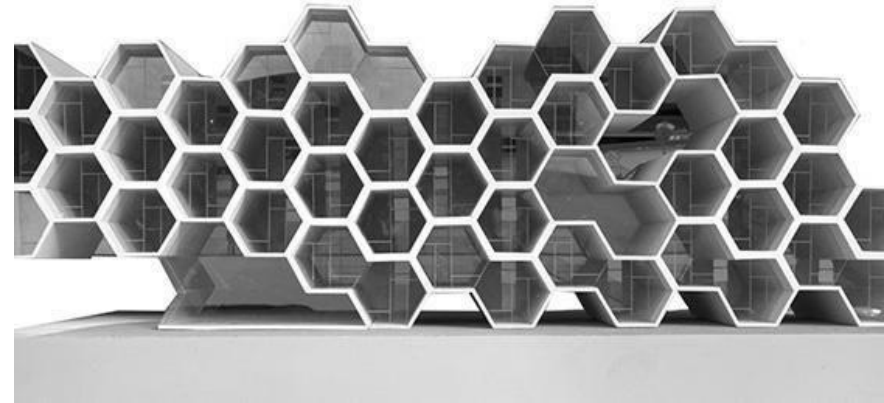


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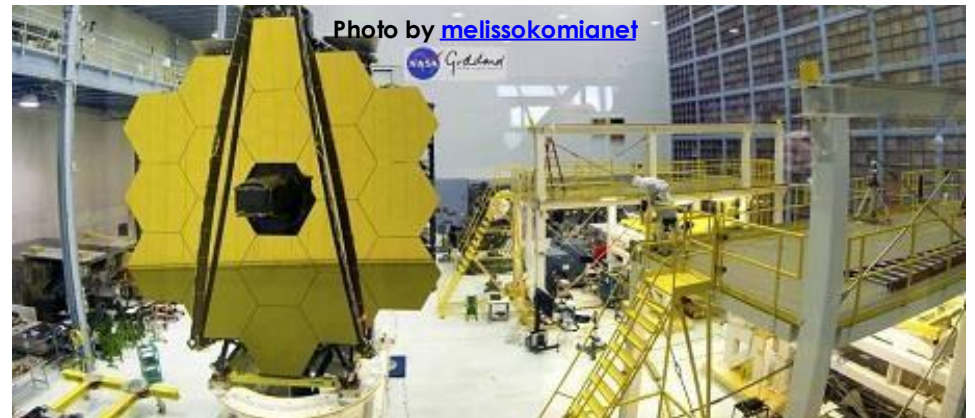
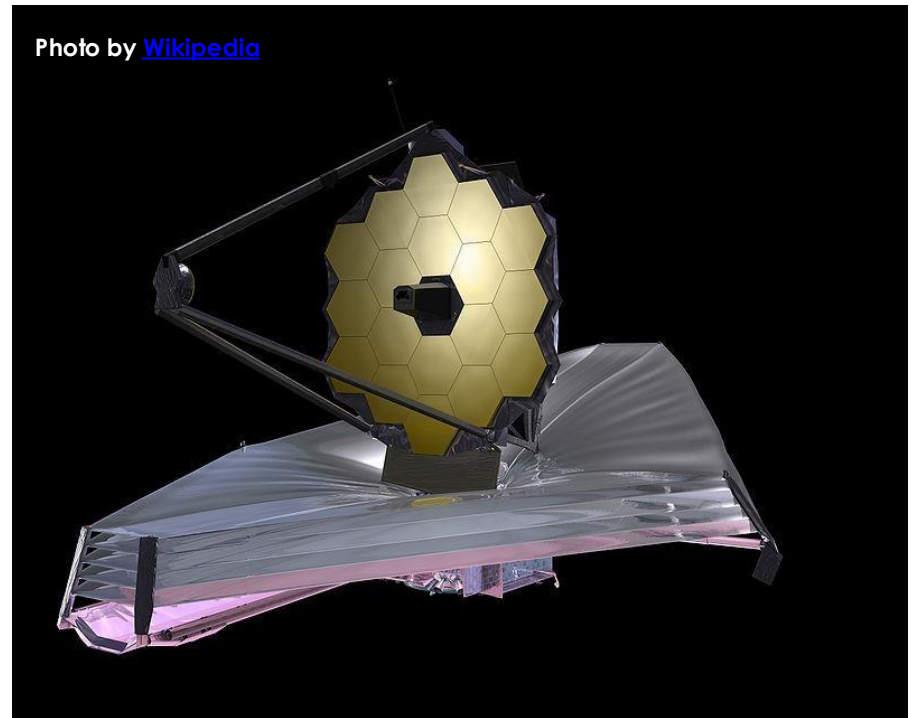


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James Webb Space Telescope, which is expected to launch on March 30, 2021.





James Webb's mirror measures 6.5 meters and consists of individual sections in hexagonal shapes.



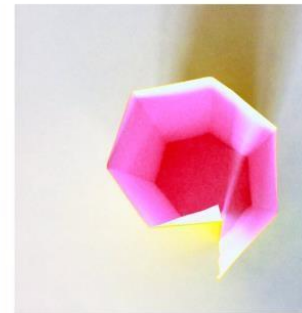
Group activity

We suggest that you create groups of two or three people.



Materials:

- Paper and/or cardboard in various colors (it is best to prefer
- Cardboard so that the structures have greater stability).
- Scissors.
- Glue.



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With the technique shown below, you can create hexagons of different lengths and width. In this way, each team will create a piece of a city.



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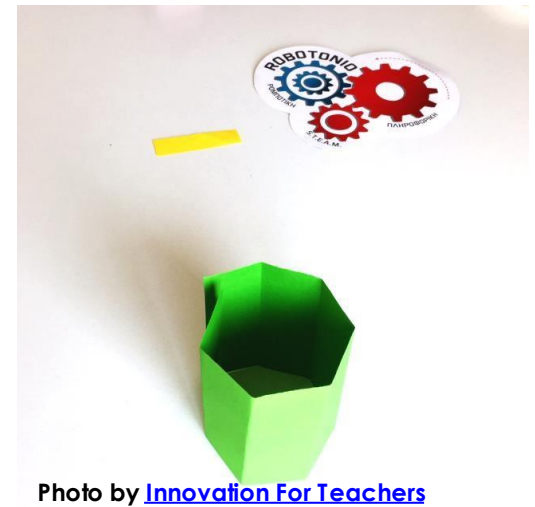
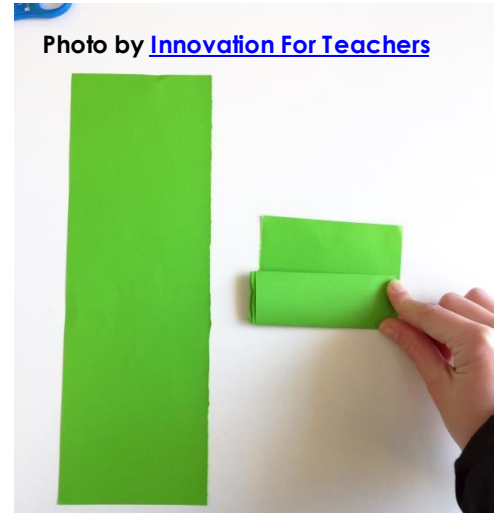
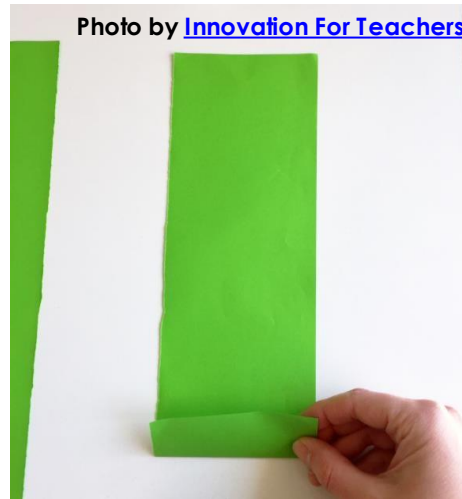


Photo by [Innovation For Teachers](#)

Take any piece
paper or cardboard.



Fold the paper 6 times.



Cut off any leftovers.

Open it.



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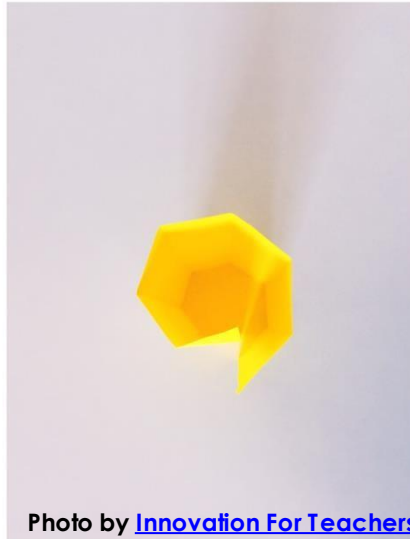


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Use glue to close your hexagon and join it to other pieces.



What do you want your city to have? Buildings, statues, playgrounds?

Decide as a team and start building.



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