

Edible DNA

Suggested Age / Grade Level	Curriculum Covered	Duration
Grades 5 to 8	Understanding Life Systems- Cells	Total: 40-45 minutes

Learning goals

The objective of this activity is for students to explore and learn about the DNA structure, its composition and function by building their own helix from materials found at home.

Fun Facts

- 99% of all DNA in humans are identical
- DNA was discovered accidentally by a swiss researcher named Friedrich Miescher. Initially, he was trying to study white blood cells and stumbled across a molecule he coined the “nuclein”. This was later known as DNA.

Key Terms

DNA (deoxyribonucleic acid): DNA is the material that carries all the important code for how we (or any living organism) will look like and function. It is located in every cell of every living thing.

Nucleotides: Nucleotides are the basic units of structure of DNA that consist of nitrogenous bases (adenine, cytosine, guanine, or thymine) joined to a sugar with five and a phosphate molecule.

Ontario Curriculum Connections

Grade 5: Human Organ Systems

Grade 8: Understanding Life Systems: Cells

Activity Timeline/Agenda

- Watch video (1 minute)
- Intro + Fun Facts (3-5 minutes)
- Activity (20 – 25 minutes)
- Discussion (5 – 10 minutes)

Materials

- Twizzlers (2 per student)
- Toothpicks (6 per student)
- Mini Marshmallows (12 per student; preferably ones with 4 different color)
- Sharpie to label marshmallows (optional)

Additional Setup Requirements

- For an alternative healthier option, marshmallows can be replaced with different pieces of fruit (to represent each base pair!). For example: Apples will be representing Adenine, Grapes will be representing Guanine etc. **OR** you can use marshmallows with different colors to represent the different base pairs.
- We suggest labeling base pairs to help students identify nitrogenous base pairing (If this is done, please inform students that they can't consume the marshmallows once labelled with the Sharpie)
- For a more polished helix, trim off the ends of the toothpick with scissors after they have been made into a helix!

Please refer to: <https://www.weareteachers.com/edible-science/> for more information on activity