

Module 3: Strawberry DNA Extraction *Teacher Guide*

Target Audience: 7-12 Grade Science, Biology, Any Science

Overview:

The 30-60 minute activity uses DNA from strawberry using simple materials and focuses on physical processes.

Objectives:

- Students participating in this activity should be able:
 - Explain how to extract DNA from strawberries.
 - Observe when DNA looks like in the real world.
 - Describe the effect of heat on many things and how things change.
 - Understand how DNA is found in all the food we eat.

National Science Education Standards:

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Content Standard 1: Life Science 1.A

- **Organisms and Heredity.** Every organism originates as an individual (for asexual reproduction) or as a pair of individuals (for sexual reproduction). Heredity is the passage of these characteristics from one generation to another.

Content Standard 1: Life Science 1.B

- **Genes and Cellular and Molecular Information in Cells and Systems.** The genetic information stored in DNA is used to direct the synthesis of the thousands of proteins that each cell requires.
- **The Molecular Basis of Heredity.** In all organisms, the instructions for specifying the characteristics of the organism are carried in DNA, a large polymer formed from subunits of four kinds (A, T, C, and G). The chemical and structural properties of DNA explain how the genetic information that controls heredity is faithfully transmitted to generate a string of molecules (genes) that is replicated by a copying mechanism. Each DNA molecule is made from a single chromosome.

Science Content:

1. DNA (20-30 min) 2. Strawberry extract DNA from strawberries

Science Process Skills:

- Observing
- Classifying
- Inferring

Life Skills:

- Communication
- Learning
- Collaboration

Time:

30-60 minutes