

### 3-D DNA Model

The thread that binds all living things and is responsible for the unity and diversity for life is DNA. Since we cannot observe DNA directly, you will be tasked in creating a 3-D model of the molecule. DNA is made up of pairs of nucleotides in a specific order. Each base has a complementary pair to ensure that when DNA is copied for a new cell that the information is conserved. Your model should contain the following:

- At least 10 base pairs
- Correct sequence of bases
- Sugar phosphate backbone
- Creativity

**Some materials you may wish to use are:**

- Recycled or found materials
- Construction paper
- Food products (marshmallows, gummy bears, jube jubes, macaroni etc)
- Toothpicks
- Playdough
- Modelling clay
- Pipe cleaners
- Yarn



You may work individually or in pairs. No groups of 3

# DNA Model Grading Rubric

**This rubric will be turned in with your model. Your model will not be graded if the rubric is absent.**

## **Accuracy of model-**

- \_\_\_\_\_ 10 base pairs minimum (2 points)
- \_\_\_\_\_ Complementary Base Pairing (2 points)
- \_\_\_\_\_ Hydrogen bond between base pairs (2 points)
- \_\_\_\_\_ sugar-phosphate backbone, base pairs connect to sugar (2 points)
- \_\_\_\_\_ Shows correct double helix shape (2 points)

## **Quality of model-**

- \_\_\_\_\_ DNA model is 3D (2 points)
- \_\_\_\_\_ Key/Labels Included (2 points)
- \_\_\_\_\_ Structure is free-standing (2 points)
- \_\_\_\_\_ Model shows effort, creativity and time invested (4 point)