



Building 2D Materials

Two-dimensional (2D) materials are materials that are only one to a few atoms thick! But they are much wider and longer, so they form very thin sheets. The properties of 2D materials are very different from normal 3D materials, and are a part of some very exciting research in nanotechnology happening around the world.

In this activity, you will build the atomic structures of some of the most important 2D materials.

What you need

- “Atoms” made out of marshmallows or gummy candies of different colors, or you can shape them out of modeling clay (Play Doh, Plasticine, etc.)
- Toothpicks (preferably with pointy ends)
- Cardboard tube from toilet paper, paper towels or wrapping paper
- Template diagrams on following pages

What to do

Follow the instructions for each type of 2D material on the following pages. You will use candies / clay to represent atoms, and toothpicks to represent bonds. Some materials have only one type of atom, so you can use one color of candy or clay. Some materials have two types of atoms, so you should use two colors of candy or clay.

What you'll see

As you follow the instructions, you will gradually build a larger and larger model of each of the 2D material sheets. The candies represent atoms and the toothpicks represent bonds.

Learn more

Two-dimensional materials:

https://en.wikipedia.org/wiki/Two-dimensional_materials