**ACTIVITY: Make an adenovirus**

**Activity idea**

In this activity, students use a template to make a model of an adenovirus and investigate the different shapes of different viral diseases and the similarities and differences between viral families.

By the end of this activity, students should be able to:

* create model of a virus
* understand that different viruses have different shapes.

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**Introduction/background**

Students make a model of a virus from the *Adenoviridae* family of viruses. The viruses from this family can cause diseases such as tonsillitis, conjunctivitis, respiratory diseases, ear infections and gastroenteritis.

**What you need**

* Copies of the student handout [Making a virus](#handout)
* Copies of the [isohedron template](#template)
* Scissors
* Glue/sticky tape
* Drinking straws (4 for each virus)
* Beads or small polystyrene balls (12 for each virus)
* String

**What to do**

1. Hand out copies of the student handout [Making a virus](#handout) and [isohedron template](#template).
2. Assist students to construct their virus models and discuss the results.

**Extension ideas**

Students pick their ‘favourite’ viral disease from the following list. Using Wikipedia ([www.wikipedia.org](http://www.wikipedia.org)), they find out what virus family it belongs to and what it looks like then use found materials to construct a model to show the rest of the class. Is there anyone in the class whose virus comes from the same family but causes a different disease?

|  |  |  |  |
| --- | --- | --- | --- |
| Polio | Smallpox | Ebola | T4 bacteriophage |
| Cold sores | Influenza | Yellow fever | Glandular fever |
| Hepatitis B | Rabies | SARS | Black death |
| Spanish flu | Mumps | Typhoid | Whooping cough |
| H5N1 | Cholera | Lassa fever | Kaposi’s sarcoma |
| Chicken pox | Measles | Marbug | Winter vomiting bug |
| Dengue | HIV | Common cold |  |

**Student handout: Making a virus**

You are going to make a model of a virus from the *Adenoviridae* family of viruses. The viruses from this family can cause diseases such as tonsillitis, conjunctivitis, respiratory diseases, ear infections and gastroenteritis.

***What to do***

1. Cut out the isohedron template.
2. Crease along the lines.
3. Glue the tabs to make an isohedral shape. This represents the virus capsid.
4. Before you glue the last tab, coil up the string and put it inside the virus capsid. This represents the viral DNA.
5. Cut the straws into 5 centimetre sections – you need a total of 12 for each virus.

1. Cut two slits about 2 centimetres into one end of each straw, and spread out the three ‘legs’.
2. Stick each leg onto your virus so that the straw sticks up from each corner of the capsid.
3. Stick a bead or ball onto each straw.

The straw and beads are fibres with a protein on the end. This protein binds to the surface of a target cell and helps it to get into the host cell. The fibres are what give the *Adenoviridae* family their unique appearance.

**Isohedron template**

