# Look Kool – Origami

**ABC ME screening details: Monday** 27 April, 2020 at 11:45am

This episode can also be viewed on [ABC iView](https://iview.abc.net.au/show/ecomaths)

**Key learning areas:** mathematics, science and technology

**Level:** upper primary

**About:** Stefan…

## Before the episode

1. Write or draw a list of objects around your house that can fold and unfold. Can you identify a reason why each of these objects has been designed to fold and unfold?

## After the episode

1. To complete this activity you will need a square piece of paper and a coloured pencil or marker.
* Fold your square paper in half to form a rectangle.
* Fold your rectangle in half to form a square.
* Fold your square in half to form a triangle.
* Fold your triangle in half to form a smaller triangle.
* Colour in one side of your triangle.
* Completely unfold your paper to return to your original square.
1. What fraction of your original square is the coloured triangle? Write or draw an explanation on the unfolded paper. How many folds did you make? Is there a relationship between the number of folds you made and the fraction you found?

## After the episode

|  |  |
| --- | --- |
| Paper plane challenge: Your task is to build a paper plane that will fly as far as possible. To complete this task you will need:* A sheet of A4 paper
* A measuring tape
1. Build a paper plane by following the steps provided. At this stage, do not make any modifications to your plane.
2. Find a safe, open space to fly your plane. If possible, extend the measuring tape along the ground and lock it in place.
3. Use the measuring tape to make a prediction about how far your plane will fly. Record your prediction in the table.
4. Make three flights with your paper plane and record your results in the table.
5. Find the average flight distance by adding the three results together and dividing the answer by 3.
6. Make a modification to your paper plane. You can use one of the suggested modifications or come up with a modification of your own.
7. Repeat steps 3-5 of the experiment, recording your new results in the table.
 | **Possible modifications*** Attach a paper clip or coin to your plane for extra weight.
* Add an extra fold to the wings to bend them up slightly
* Try adding some elevator flaps to the rear of the wings
* Create a new plane from cardboard or A3 paper
* Start with a square piece of paper

Instructions to fold a paper plane |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Prediction** | **Flight 1** | **Flight 2** | **Flight 3** | **Average** |
| **Original design** |  |  |  |  |  |
| **Modified design** |  |  |  |  |  |
| **Modified design** |  |  |  |  |  |

**Follow-up activity:** Did your modified paper planes fly further on average than your original design? Develop an explanation why your modified planes did or did not fly further?

# NSW teacher notes

This is an optional standalone resource that could supplement student learning. The activities align with syllabus outcomes across stages and can be modified to meet the needs of your students. Students can complete the activities while learning at home and in the classroom. All activities can be completed without access to the internet or a device. Teachers could collect student work to offer feedback and as evidence of learning.

## Learning intentions

* To model, compare and represent fractions
* To measure and compare distances

## NSW Mathematics K-10 Syllabus outcomes

|  |  |  |
| --- | --- | --- |
| Strands | Stage 2 | Stage 3 |
| Working mathematically | uses appropriate terminology to describe, and symbols to represent, mathematical ideas (MA2-1WM) | describes and represents mathematical situations in a variety of ways using mathematical terminology and some conventions (MA3-1WM) |
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| Working mathematically | checks the accuracy of a statement and explains the reasoning used (MA2-3WM) | gives a valid reason for supporting one possible solution over another (MA3-3WM) |
| Measurement and geometry | measures, records, compares and estimates lengths, distances and perimeters in metres, centimetres and millimetres, and measures, compares and records temperatures (MA2-9MG) | selects and uses the appropriate unit and device to measure lengths and distances, calculates perimeters, and converts between units of length (MA3-9MG) |

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