

Neil Armstrong Space

Workshop Handbook

All the information you need to
deliver a successful Neil
Armstrong workshop!



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Setting up for the Neil Armstrong workshop

About the workshop

Welcome to your Neil Armstrong workshop. This workshop is all about the children having a wow moment of launching rockets while embedding their learning about space exploration and astronauts.

You will need your rockets, pumps, blocks, wooden trellis and corks for the launch, along with buckets jugs and water bags to provide the 'fuel'. Then, all your constellation resources for finding out about stars.

Don't forget tarps and sit mats and, if it's looking a little wet (or very sunny), your canopies just in case!

Assessing the space

The class teacher who booked the workshop will be aware that the workshop requires a large space to take place, which is not being used for playtime or other activities throughout the day. However, you may not be greeted by this teacher on arrival, so you may need to share this information with the staff you meet upon arrival.

When you are taken to the space, you will need to conduct a dynamic risk assessment. This means checking that the space doesn't contain any hazards such as litter or trip hazards and the gradient and size is suitable for the activities.

Setting up your resources

This workshop relies on lots of water to launch the rockets, so the most important part of setup is to fill all of your water containers as quickly as possible. If doing a three-workshop day, consider how you will ensure enough water for the second session, as there will be no time to top up between the morning sessions.

Set up your buckets and jugs where you are launching the rockets from, then make piles of the other resources ready for the children to collect.

Choose a suitable space for the constellations activity to take place and ensure the resources are ready.

Preparing for rainy showers

If the forecast looks set to be light rain, the children should arrive dressed for it. But it's always a good idea to look around the outdoor space and consider where you could shelter if it becomes unexpectedly heavier.

If moderate rain is forecast and wind below 20mph, you will need to put the canopies up to provide shelter if there is no other shelter available. Please watch the canopy video on the training platform to see how to do this.



Workshop outline



Introduction

- > Introduce yourself to the children.
- > Share with them your three rules for the workshop:
 1. Always listening
 2. Staying safe outdoors
 3. Having lots of fun!
- > Introduce the children to your working space.
- > Identify the boundaries of where you are working (you could mark this by tying ribbon to fences, bushes, and gateways to signal the edge of the boundary).

Play '3 before me' boundary game:

- > Share three adjectives with children e.g. smooth, cold, damp.
- > Ensure children know what your adjectives mean.
- > Send them off to touch three things in the outdoor space that match your three adjectives.
- > When they've done all three, they come back to you, touching the floor in front of you so you know they've done.
- > When all children are back, ask them to share what they found.

Curriculum Links & Key Skills

- Year 2 children learn 'living, dead & never alive' so including one of those for Year 2 classes will please teachers.
- Choose a well known word for ease and then something children might not be as familiar with such as 'rough' or 'flexible' to extend children's vocabulary.

Rocket launch

- > Share with children a photo of the Apollo 11 team of astronauts, asking children to identify which one is Neil Armstrong. *If doing the workshop for another astronaut, modify information/images shared for the introduction to fit.
- > Share facts about the Apollo 11 mission, its purpose, when it happened etc. Ask children if they know any facts too.
- > Now show them a photo of the rocket Saturn V. Explain that today we are going to launch rockets just like Saturn V.



Rocket launch continued...



Curriculum Links & Key Skills

- The KS1 history curriculum includes learning about the lives of significant individuals in the past who have contributed to national and international achievements. Neil Armstrong (or another astronaut being studied) is definitely one!
- It's important that the children learn (or recap) some of the key facts about him and the moon landing, thinking about what effect this has had on our lives.

- > Ask the teacher to put the children into groups.
- > Number each child within the team, numbers 1-6.
- > Demonstrate how to set up the launch pad, before getting them to collect the first two items (numbers 1 and 2 could do this).
- > Then ask groups to set up their own launch pad.
- > Model filling the rocket with fuel to the black line, then, once they have collected the rockets, have them do this. Once done, they should place in their launch pad to hear further instructions.
- > Model attaching the cork (already on the pump) to the bottle, and how to safely launch the rocket (including the fact that all groups will await the class countdown to launch and await the words 'go and get your rocket' before retrieving, to keep it safe)
- > Watch our training video for more information on how to do this and for 'troubleshooting' advice if it doesn't work quite as planned.
- > Ask children to set up their rocket ready to launch.
- > In number order, launch the rockets ensuring every child has a turn.



Workshop outline continued

Curriculum Links & Key Skills

- Collaboration, communication & teamwork - these are key skills many children are missing these days! Encourage those who are disengaged to work together with their team.
- Following a set of instructions is also an important life skill.
- The children will also be starting to develop their measuring of volume too.

Take it a step further:

> Discuss how Neil Armstrong and his team only had 15 seconds of fuel left before landing on the moon and how it almost didn't happen as they needed to be precise. Discuss how it might have felt to have had 15 seconds to do something so difficult.

> Ask the children to launch the rockets once more but this time using the measuring jugs to measure out 400ml of water. Ask for predictions about what will happen.

> Measure the distance of the rockets, discuss the outcomes.

> Repeat the launch once again, this time with 1000ml of water measured out with the jugs. Ask for predictions.

> Measure the distance of the rockets.

> Repeat for 700 ml of water (which is to the black line).

> Discuss all three launches (400ml, 700ml & 1000ml) ask the groups to share distances, what they found and whether it matched their predictions.



Curriculum Links & Key Skills

- This activity makes cross-curricular links to measurement in maths, both with volume and also distance.
- It also allows the children to think scientifically, and make predictions about what might happen in an investigation. Although this is more explicitly a KS2 working scientifically skill, this activity is a great way to introduce making predictions.

Workshop outline continued



Transition between activities

Play space tig to introduce some movement and warm up if cold!

- > Choose 2 or 3 children to be the asteroids.
- > Choose 2 or 3 children to be the astronauts.
- > The rest of the class run around. If the 'asteroids' tig them, they stand still and turn into a broken spaceship (holding their hands in front of them and clenching and opening their fists like blinking lights).
- > The astronauts attend each broken spaceship and fix it by pretending to tighten screws and bolts with their screwdriver (with sound effects!) in front of them. The child is released and is back in the game.

To break the rocket launches up a little, either partway through to get moving, or between the regular launches and the section on measurement for a chance to refocus, play Space Tig at that point.

Curriculum Links & Key Skills

- Physical movement for warmth and to shake off any wiggly bottoms!
- Team work

Creating constellations

- > Put the children into groups of 3 (or same groups as previously).
- > Discuss the sights Neil Armstrong and his team might have seen in space, showing the picture of the stars from the ISS.
- > Ask the class if they know what constellations are. Share how they are like mini maps of the stars.
- > Explain that we are going to replicate the night sky by creating some constellation artwork on the playground (*see adaptations below for taking this part indoors*).
- > Give each group a bag with the constellation cards, bark stars and chalk in.
- > They then work together to recreate the constellations, large-scale on the ground.
- > Once complete, all take a moment to step back and admire the art they've created.



Curriculum Links & Key Skills

- This activity supports KS1 art, with the children learning to use a range of materials creatively and developing a wide range of art and design techniques in using colour, pattern, texture, line, shape, form and space.
- In this activity, the children are also learning more about space and the night sky.



Timings for a Neil Armstrong workshop



Timings for a typical workshop (1 class & 2 class)

20 mins e.g. 10:00-10:20

- > Introduction
- > Boundary game
- > Introducing Neil Armstrong and Apollo 11 mission

15 mins e.g. 10:20-10:35

- > Modelling rocket launches and building this up with the groups in steps

55 mins e.g. 10:35-11:30

- > Launch rockets
- > Complete measured launches (if there is time)

10 mins e.g. 11:30 - 11:40

- > Have children reset their rocket stations
- > Play space tig

20 mins e.g. 11:40 - 12:00

- > Create star constellations

These timings are rough guides to keep you on track for the workshop, ensuring that you don't finish too early or late. They may change slightly depending on your group.

Adaptations of the workshop

Small class of children e.g. 20

- > Keep groups to sizes of at least 4 to avoid running too quickly.

Less time for the workshop (e.g. 1.5 hr booking, children come out late/go in early)

- > Remove excess explanations, while keeping the core information
- > Once all the children have launched a rocket, move on to resetting the stations without undertaking the measured launches
- > Ask children to tidy up the resources ready for the next group
- > Shorten the time spent on Space Tig.

More time to fill? Go further with the discussion points, spending time on the different volumes of fuel, making predictions and coming to conclusions on the investigation.

Cold/wet weather: Take the constellation art inside and use large rolls of black poster paper to chalk on instead of the playground surface.



Timings for a Neil Armstrong workshop



Timings for a 3 class workshop (1hr 30 mins) :

10 mins e.g 09:00 - 09:10

- > Introduction
- > Boundary game
- > Introducing Neil Armstrong and the Apollo 11 mission

15 mins e.g. 9:10 - 9:25

- > Modelling rocket launches and building this up with the groups in steps

45 mins e.g. 9:25-10:05

- > Launch rockets

10 mins e.g. 10:05 - 10:15

- > Have children reset their rocket stations
- > Play space tig

15 mins e.g. 10:15 - 10:30

- > Create star constellations

> Tidy up and finish - **this is especially important for these workshops!**

These timings are rough guides to keep you on track for the workshop, ensuring that you don't finish too early or late. They may change slightly depending on your group.

Tips for running the workshop in less time

- > Remove excess explanations, while keeping the core information
- > Once all the children have launched a rocket, move on to resetting the stations without undertaking the measured launches.
- > Ask children to tidy up the resources ready for the next group.



Key facts to memorise



Key facts to share with children

General facts - discuss with the image of the three astronauts

- Who are the three people in the image? What job do they do? How can you tell? This could include a discussion about the space suit or helmet.
- Discuss with children what an astronaut does (goes into space - not necessarily to the moon!)
- Introduce them to Neil Armstrong and his fellow crew (Buzz Aldrin and Mike Collins)
- The names of the astronauts were on their suits (so that they can tell who is who when the helmets are on as they are reflective)

Facts about the moon landing

- Date of Moon Landing was July 1969. The rocket launched on 16th July and the lunar module landed on the Moon on 20th July.
- The mission for them to land on the moon was called Apollo 11 - the rocket they used to get there was called Saturn V (show the rocket image)
- Share with children the size of the rocket (tall as 36 storey building) to get them to the moon and the space they occupied (to give them a sense of how big it was)
- Neil Armstrong and Buzz Aldrin went down onto the moon in the Lunar Module (The Eagle), while Mike Collins stayed in the command module. They spent 21.5 hours on the moon in total.

Famous quotes

- When they landed on the moon 'The Eagle has landed'
- When Neil Armstrong took his first step on the moon 'That's one small step for man, one giant leap for mankind'.

Challenges

- When it got to the moon landing, Neil & Buzz only had 15 seconds left of fuel in order to land on the moon in the right spot, and have enough fuel to get them back off the moon too.
- Buzz was the one who landed the lunar module, Neil was in command.



Maintaining resources

Replenishable Resource List



Resource	Recommended supplier & price	Maximum reimbursement
Jumbo chalk (for constellations)	<u>Muddy Faces</u> £5.99 + postage or <u>Amazon</u> £7.99	£8 per pack
Bottle (for rocket)	Supermarket - cheap pop bottle (2.5l)	£1
Corks (for rocket)	<u>Make it Magic</u> £1 (for 9) + postage	£3 per pack
Pump needles	<u>Amazon</u> £3.99 (must be 0.9cm in diameter at the connection point)	£5 per pack
Parcel tape (for wrapping new corks)	Supermarket	£2.50
Black poster paper	<u>The Range</u>	£3.99



Weather Matrices



Neil Armstrong

Overall conditions: **Clear**

		Feels like temperature (°C)								
		Below -5	-5 - 0	0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30+
Wind gust speeds (mph)	0 - 5			A	A	✓	✓	✓	A	
	5 - 10			A	A	✓	✓	✓	A	
	10 - 15			A	A	✓	✓	✓	A	
	15 - 20				A	✓	✓	✓	A	
	20 - 25				A	Q	✓	✓	✓	A
	25 - 30				A	Q	Q	Q	Q	
	30 - 35									
	35 - 40									
	40 +									

A - Cold temperatures - adapt the workshop

- Use warm water and take regular breaks from rocket launches to play 'space tig'.
- Try to set up in an area that shelters from any breeze.
- Use rolls of sugar paper to take the constellation artwork indoors.

Q - Windy weather - take a moment to reflect

- Check the windy flowchart (*see later pages*) to ensure the workshop is safe to go ahead.

A - High temperatures

- Use the canopies to provide shade for rocket launches.
- Contact the teacher beforehand to say everyone must have a water bottle, sunhat & sun cream applied. Take water breaks where needed.
- Also advise the class in the afternoon is encouraged to stay in the shade at lunchtime to avoid prolonged exposure to the heat.



Weather Matrices



Neil Armstrong

Overall conditions: **Light rain/showers**

		Feels like temperature (°C)									
		Below -5	-5 - 0	0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30+	
Wind gust speeds (mph)	0 - 5			A	Q	A	✓	✓	✓	A	
	5 - 10			A	Q	A	✓	✓	✓	A	
	10 - 15			A	Q	A	✓	✓	✓	A	
	15 - 20					A	✓	✓	✓	A	
	20 - 25						✓	✓	✓	A	
	25 - 30						✓	✓	✓	A	
	30 - 35										
	35 - 40										
	40 +										

Keep an eye out for storm warnings - workshops should not go ahead in thunderstorms

A - Cold temperatures - adapt the workshop

- Use warm water and take regular breaks from rocket launches to play 'space tig'.
- Try to set up in an area that shelters from any breeze.
- Use rolls of sugar paper to take the constellation artwork indoors.
- Put canopies up to provide shelter from any rain - temperatures are too cold for children to be getting wet.
- Be vigilant with how children are dressed - if anyone is not in a waterproof & warm coat challenge the teacher to find them one.

Q - Winter weather - take a moment to reflect

- Check the winter weather flowchart (*see later pages*) to ensure the workshop is safe to go ahead.

A - High temperatures

- Use the canopies to provide shade for rocket launches.
- Contact the teacher beforehand to say everyone must have a water bottle, sunhat & sun cream applied. Take water breaks where needed.
- Also advise the class in the afternoon is encouraged to stay in the shade at lunchtime to avoid prolonged exposure to the heat.
- If the classroom is cool, make use of it for the constellations, otherwise use a shaded spot outdoors.



Weather Matrices continued...



Neil Armstrong

Overall conditions: **Moderate rain/showers**

		Feels like temperature (°C)								
		Below -5	-5 - 0	0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30+
Wind gust speeds (mph)	0 - 5				Q	Q	Q	Q	Q	
	5 - 10				Q	Q	Q	Q	Q	
	10 - 15				Q	Q	Q	Q	Q	
	15 - 20				Q	Q	Q	Q	Q	
	20 - 25									
	25 - 30									
	30 - 35									
	35 - 40									
	40 +									

Keep an eye out for storm warnings - workshops should not go ahead in thunderstorms

Recommended to put canopies up for all workshops in these conditions to provide shelter - ensure you check the wind speed to maintain safety.

Q - Wet weather - take a moment to reflect

- Check the wet weather flowchart (*see later pages*) to ensure the workshop is safe to go ahead.

A - Wet weather - adapt the workshop

- For Neil Armstrong the canopies must go up as the children are stationary for longer, please allow time for this to be done before starting the workshop.
- If the ground is too wet, take the constellation artwork into the classroom using rolls of sugar paper.
- If weather conditions decline and the canopies cannot withstand the wind safely, stop the workshop, ask the class teacher take the children indoors and contact Hollie/Jenny for next steps.



Weather Matrices continued...



Neil Armstrong

Overall conditions: **Heavy showers**

		Feels like temperature (°C)													
		Below -5	-5 - 0	0 - 5	5 - 10		10 - 15		15 - 20		20 - 25		25 - 30		30+
Wind gust speeds (mph)	0 - 5				A	Q	A	Q	A	Q	A	Q	A	Q	
	5 - 10				A	Q	A	Q	A	Q	A	Q	A	Q	
	10 - 15						A	Q	A	Q	A	Q	A	Q	
	15 - 20														
	20 - 25														
	25 - 30														
	30 - 35														
	35 - 40														
	40 +														

Keep an eye out for storm warnings - workshops should not go ahead in thunderstorms

Recommended to put canopies up for all workshops in these conditions to provide shelter - ensure you check the wind speed to maintain safety.

Q - Wet weather - take a moment to reflect

- Check the wet weather flowchart (*see later pages*) to ensure the workshop is safe to go ahead.

A - Wet weather - adapt the workshop

- For Neil Armstrong the canopies must go up as the children are stationary for longer, please allow time for this to be done before starting the workshop.
- If the ground is too wet, take the constellation artwork into the classroom using rolls of sugar paper.
- If weather conditions decline and the canopies cannot withstand the wind safely, stop the workshop, ask the class teacher take the children indoors and contact Hollie/Jenny for next steps.

