



Science

Can you land an astronaut safely?

- The Egg Drop

You are in charge of landing an astronaut safely on the ground.

You must design and test a landing craft to safely get them to the surface.

A safe landing conducted from the tallest height wins! Film your attempt to enter, submit your video by emailing it to your normal Science classroom teacher.

Challenge: can you design, build, and test a lander?

You will need:

- An egg to represent your astronaut. You might want several in case you break one!
- Something to film your test landing with.
- You can use any materials you wish to build your landing craft – be creative!

For a successful landing, your egg must be intact (**no cracks!**).



Method

1. **Brainstorm** – spend 15 minutes drawing as many different ideas for your lander as possible.
2. **Teamwork** – share your brainstorm with someone you know (can be family or friends) and get them to add any positive suggestions to your ideas.
3. **Build** – build your chosen design(s), don't be afraid to change from your original plan.
4. **Test** – add your egg to your lander and test it! Make sure to film it.
5. **Review** – how did your landing go? Do you need to change your design?
6. **Adapt** – alter your design to improve it.
7. **Test** - add your egg to your lander and test it! Make sure to film it.
8. **Repeat** until you have landed an egg safely from the tallest possible height!

Need help? Watch this video of how a real NASA spacecraft lands on Mars:
<https://www.youtube.com/watch?v=COlwFLPiZEE>

Extend:

The atmosphere on Mars is much thinner than Earth, and the strength of gravity is also less than Earth's. What would happen to your egg if you dropped it on Mars? Would it have landed safely?

How could these differences be an issue for NASA engineers designing landing craft?

Review

What was the most important feature of your landing craft?
Why do you think what this was useful?

What you should have found:

When designing landing craft NASA engineers must review their designs all the time to improve them. By following this method, you are acting how real scientists and engineers do.