

WORKING IN SPACE

Astronauts living on the International Space Station (ISS) sometimes need to go outside the spacecraft to undertake repairs. In order to do this they need to wear a pressurised spacesuit to protect them from the vacuum of space – but a pressurised spacesuit isn't easy to move around in! In particular, the pressure inside the suit makes it difficult for astronauts to bend at their joints or at the waist. Sometimes they use special tools to help them carry out their tasks despite the challenges of working whilst wearing a spacesuit.

Your mission

You are an astronaut tasked with collecting an object from one location and putting it in another whilst on a spacewalk.

You will need:

- inflatable splints
- a bottle with a screw top lid
- litter picker
- scrunched-up paper
- bucket

What to do

Have a practise run of the following two tasks:

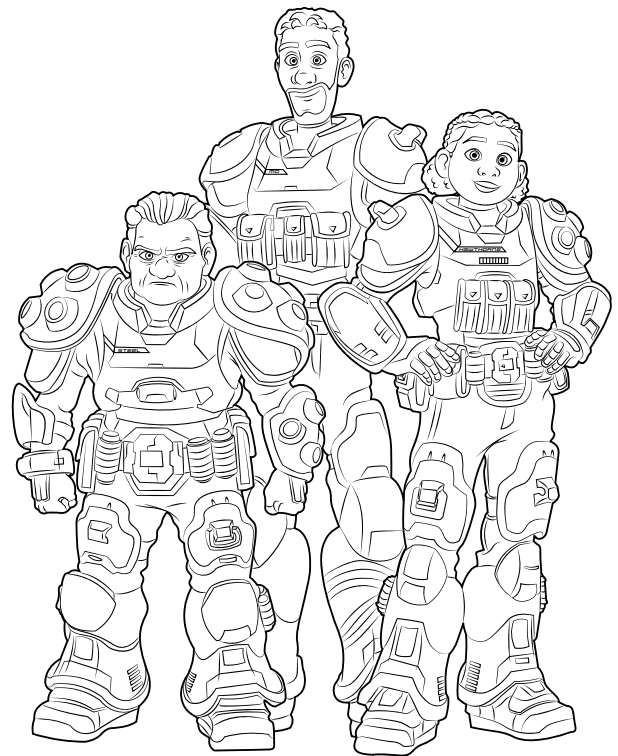
- Try opening the lid of the plastic bottle and putting it back on again
- Use the litter picker to pick up the scrunched up paper and put it in the bucket.

Now try again, this time wearing the inflatable splints on your arms. The splints should be placed over your arms and then inflated when you are wearing them – the air inside them restricts your movement in a similar way to a pressurised spacesuit.

Do make sure you have help to get the splints on and off and that you do this activity with responsible adult supervision!

Is it easier or harder to complete these tasks with your spacesuit (splints) on?

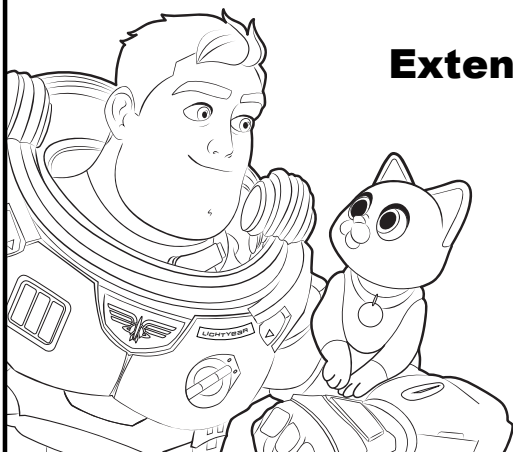
Does using a special tool like the litter picker make the second task easier?



Extend your mission

Take it in turns to complete the second task whilst wearing the splints and time each other. Who was the fastest?

Try wearing thick gloves to do the activity – astronaut spacesuits include gloves too. Does that make the tasks harder or easier?



Alternatives

If you don't have access to inflatable splints, you could try using one or more thick jumpers and a padded coat to simulate the experience of wearing a spacesuit.

If you don't have a litter picker, you could try to think of other simple tasks to attempt like putting on your shoes, or writing on a piece of paper.

Remember to take the splints off before doing anything else after your mission!

This resource was created by Life Science Centre with support from ASDC as part of Project Lightyear: Disney and Pixar have teamed up with ASDC to engage people with exciting science topics inspired by the film *Lightyear*.



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