purple mash

2Simulate: The Dark Side of Elpmis User Guide

Contents

Introduction (for teachers)

This simulation allows children to explore space. They are on a mission where something goes wrong, and their task is to save the stranded astronauts.

They will need to investigate the planet's conditions, decide upon what equipment needs to be taken and solve challenges on the planet.

The simulation should be displayed on the interactive whiteboard for the whole class and children should work in groups within the class when solving the mission.

Some groups might not make it to the end of the mission because they have not brought the correct equipment. In this situation, you might decide to allow them the Emergency Resource Cards – a kind of get-out-of-jail-free resource, in case groups have left behind a piece of equipment they later deem to be essential to the mission.

You have the option of scoring each group at the end to determine the winning group. This is determined by the success of their solutions to the challenges, by the usefulness of the equipment they choose to take and by speaking and listening rewards for good class participation. You can award these at your discretion.

This simulation is used in the Computing Scheme of Work unit 3.7: Simulations.
If you are using the Computing scheme of work in your school, it is advisable to reserve the simulations for this use and then use some of the other curriculum linked resources as follow up lessons.

The Dark Side of Elpmis – Scene by Scene Ideas for Teaching

What follows is not a script as such, but it may be helpful in prompting good questioning, listening, thinking and problem solving. It only covers the main simulation, not the follow-up activities, which are described late in this document.

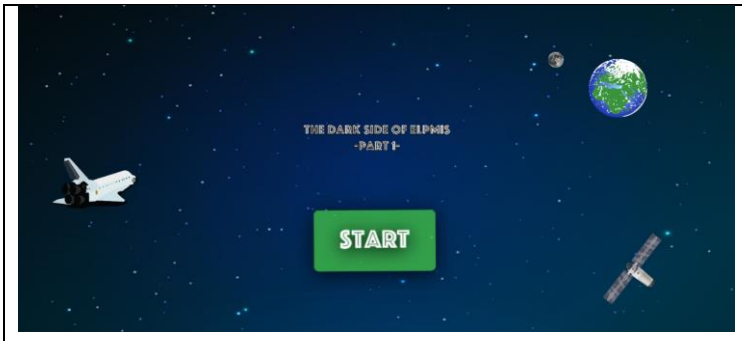
Preparation

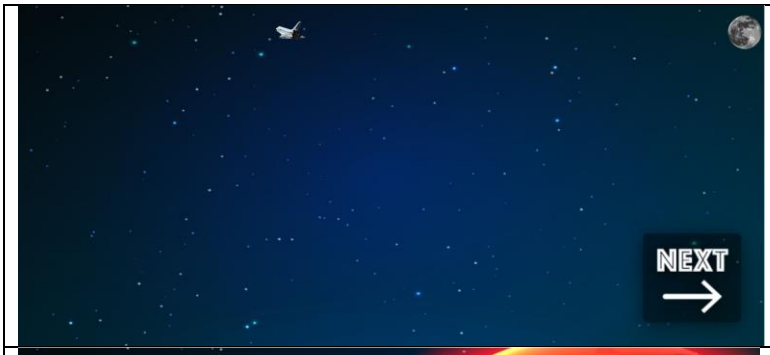
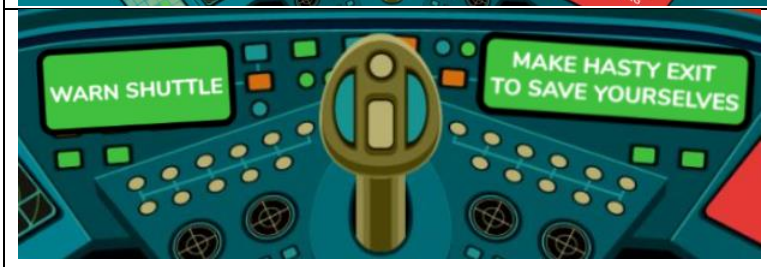
Depending on the children's previous learning and knowledge of space, it may be necessary to do a 'pre-lesson' to check understanding of basic concepts and terms such as gravity, orbit, atmosphere, oxygen, solar power, and the idea that different planets have very different conditions/environments.
Various resources will need printing, and if you wish, laminating, before this activity – see the following sections of this document for lesson plans.

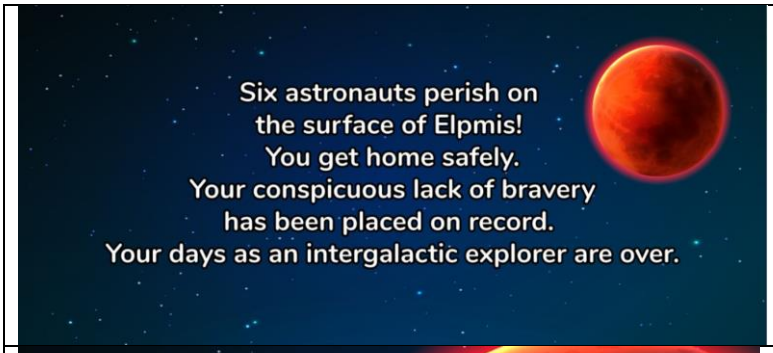
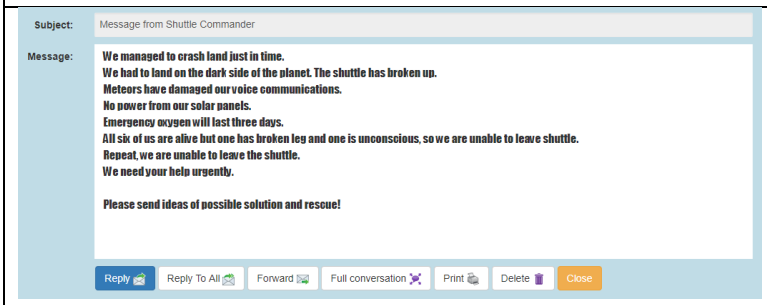
How many lessons?

In addition to the simulation itself, which may take between one and three lessons, we have included several resources for follow-up activities, many with a Literacy focus, some linking to Science. These may take up several additional lessons – it is entirely up to you.
The key decision to be taken is whether you are going to tackle the simulation itself in one lesson or two/three lessons. This will depend on the amount of detail and research you want the children to engage with at each stage of problem solving. In classroom trials two lessons were needed for the basic activity, with the potential for many more follow-up activities.
This is envisaged as an activity where the class is divided into groups. In the trials of the software we used table groups of about 5-6 children, which worked well.

Simulation Sequence Scene by Scene

	"With the help of this computer, we are going on a journey far, far away from earth and far, far into the future." "You are now space cadets" ("trainee astronauts" if you prefer!) and I am your ship's Vice Captain. "You are on your final training mission. If you succeed you will become qualified astronauts." "Are you ready?"

	"How far are we in the future?" The captain gives this information on this page.
	"Why does the Captain call them brave?"
	Meteor shower approaching!
	This is the key decision to be made – save our own skins or rescue our stranded comrades! "Can you give reasons to justify your decision?" save our own skins or rescue our stranded comrades! It will need to be a whole-class decision, but individual groups may come up with a range of reasons. 'Can you justify your decision?'

<table>
<tr><td> 
</td><td>Hopefully, they will decide to help the crew; otherwise their mission is over and they have failed! You can explore this aspect of the simulation if you wish, and then return to this point to explore the outcome if you make a different decision.</td></tr>
<tr><td> 
</td><td>We warn the shuttle.</td></tr>
<tr><td> 
</td><td>Listen carefully to the soundtrack to find out what happens.
“What do you think has happened? Are they still alive?”</td></tr>
<tr><td colspan="2">At this point, click on the ‘Incoming message’button. This opens an email simulation. Suggest that the children take notes.</td></tr>
<tr><td> 
</td><td>Task: compose a message to the shuttle. What do you most need to know about conditions on the planet? In groups, decide on the two or three questions to be asked. (It may or may not be necessary for some or all groups to have the equipment cards in advance, to help them frame their questions.) A selection of the best questions from each group can be entered here and sent to the stranded astronauts. Send the message and you will receive answers.</td></tr>
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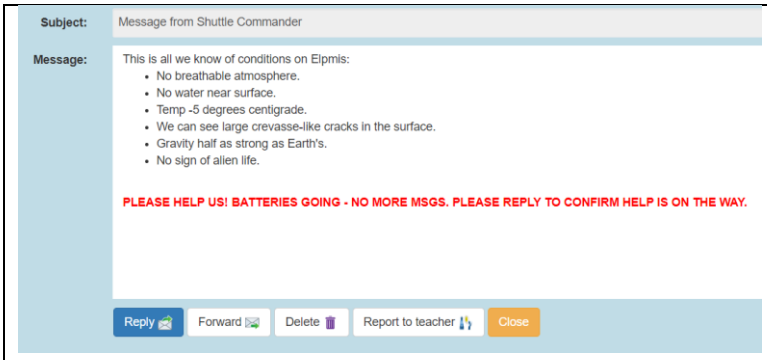
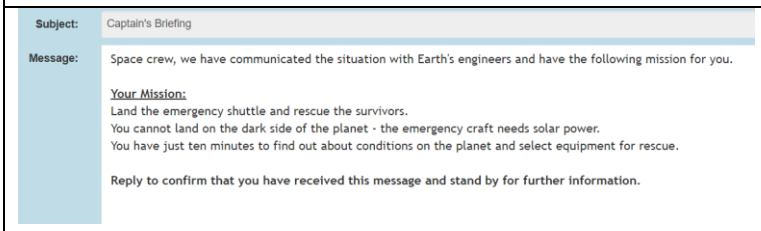
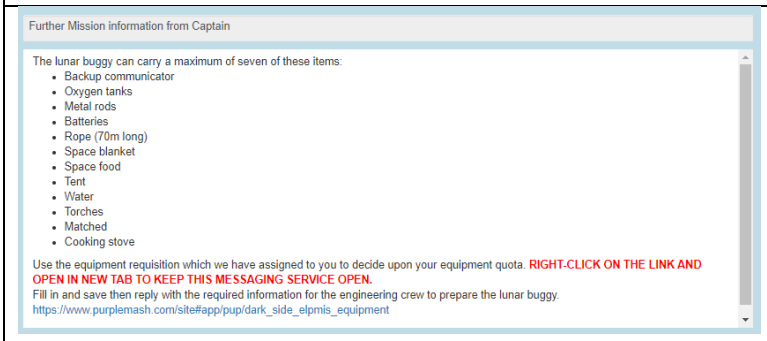


If any questions are not answered and are particularly deserving of an answer, you might have to make up the answers and could 'receive' them via your own mobile phone.

Reply to confirm that help is on the way and you will then receive a message from the Captain.



Reply to confirm that the message has been received and you will then receive further mission information from the Captain.

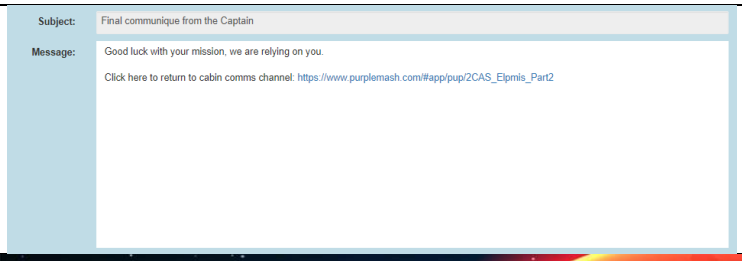
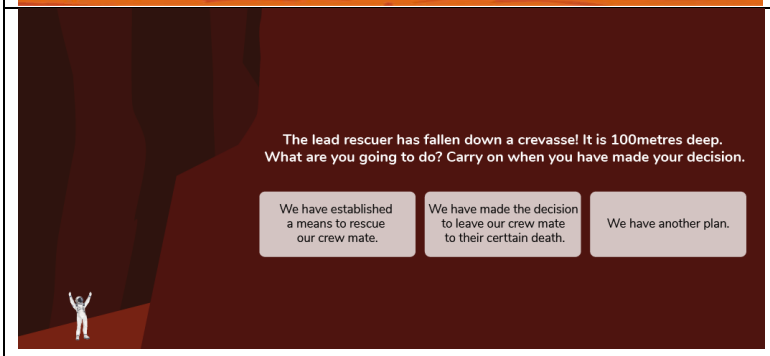


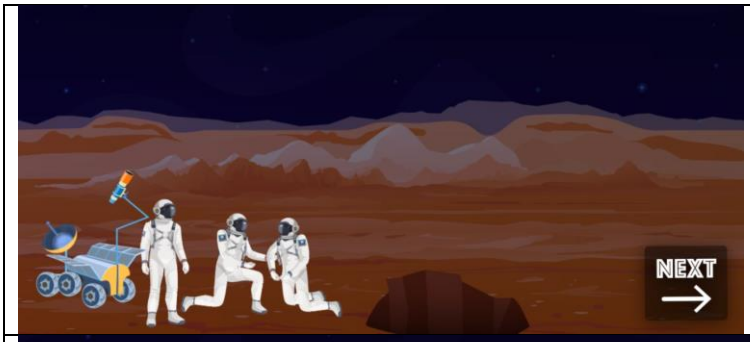
It may be appropriate to spend the rest of the first lesson on making these decisions. Time could be usefully spent recording information about conditions on the planet and giving reasons for choosing or leaving each piece of equipment. The remainder of the simulation can then be covered in a follow-up lesson.

The linked equipment requisition is the same requisition that is available in the resources section. Opening in a new tab allows the 'feel' of the simulation to continue. Alternatively, you could set this as 2do for the class. Each group could open and complete the requisition. If you are working as a class together, come up with a class consensus to send to the engineering crew. Groups could use the equipment cards to sort and decide upon what to take. Only seven items can be taken.

Task: In groups, decide which items you are going to take. Record your reasons.

Reply to the Captain and you will receive one last message:

	Use the link to exit from the email simulation and open part 2 of the Dark side of Elpmis simulation. You see the emergency shuttle launching.
	Rescue Mission underway. Click on the 'next' button.
	See the buggy and crew moving across the light side of Elpmis, then click the arrow button again "*What are the dangers?*" (You will find out soon enough!)
	*"How has he/she survived?"* (Because gravity is much weaker.) How are the cadets going to rescue the trapped trainee? (The key point to note here is the ledge. The crevasse is 100m deep – if the group has brought the 70m rope, they may be able to lower someone down to the ledge. How will they get back up? Again, weaker gravity will help with throwing things further. They may decide to leave him/her but will lose points at the end.

	This is an opportunity to feed back some of the best solutions to the crevasse problem. Save ideas to use in later report writing.
	The rescue mission progresses towards the dark side of the planet. “Did you bring a torch?” If not, an Emergency Resource Card can be used – at your discretion.
	Scenes of joy and relief. “What problems do we still have to deal with?” Discuss these remaining issues before moving on. If time is running out, different groups could examine one or other of the problems.
	Success! Time to fly home… Or to our next adventure…? Opportunities for extended writing and drama here – Elpmis: The Sequel!
	Use the printable resources *Group Scorecard* and Equipment *Scoring Sheet*. These can be accessed from the Resources section for this simulation.

After this stage has been completed, use the Equipment and Group scoring sheets (the former feeds into the latter) to assess each group's progress and achievements if you are keeping scores. Ask children to evaluate the simulation using the evaluation sheet. Groups may wish to explore the other options within the simulation to help them recognise patterns and make and test predictions. Discuss how effective this simulation is and decide upon its usefulness for purpose. Could it be used to train real astronauts, for example?

Follow-up activities

There are the following resources for follow-up activities:

- Summarising the story in 12 or 24 frames
- Writing up the Captain's Logbook
- Writing an incident report for Mission Control

Consider in addition:

- Making newspaper, blog, podcast, or vlog reports about the adventure.
- Use screenshots from the simulation and label these using callouts to identify where scientific knowledge can help solve problems.
- Key scenes can be re-enacted or explored through hot-seating and other role-play.

Topic theme lesson plan: Reports (approx. age 7-8)

There are two ready-made report formats in the classroom resources – an Incident Report and the Captain's Logbook. In addition, the 12-frame caption resource could be used as the basis for an extended report. Although this is fictional, the stylistic features of a report, back to Mission Control, are relevant here. Also, the simulation could be used as the source for a news report.

Learning Objectives that might be covered by this approach

- Listen and respond appropriately to adults and their peers.
- Ask relevant questions to extend their understanding and knowledge.
- Articulate and justify answers, arguments, and opinions.
- Give well-structured descriptions, explanations, and narratives for different purposes, including for expressing feelings.
- Maintain attention and participate actively in collaborative conversations, staying on topic and initiating and responding to comments.
- Use spoken language to develop understanding through speculating, hypothesising, imagining and exploring ideas.
- Participate in discussions, presentations, performances, role play, improvisations, and debates.
- Consider and evaluate different viewpoints, attending to and building on the contributions of others.

- Drawing inferences such as inferring characters' feelings, thoughts, and motives from their actions, and justifying inferences with evidence.
- Predicting what might happen from details stated and implied.
- Participate in discussion about both books that are read to them and those they can read for themselves, taking turns and listening to what others say.
- In non-narrative material, using simple organisational devices [for example, headings and sub-headings].

Activities

Use the 12 frame story caption. This will help the children organize their work into paragraphs. Different groups could report back on different aspects of the adventure.
Ensure that the relevant vocabulary is used; rerunning the simulation could help with this.
Consider the audience. Will the style be the same for a report to Mission Control as for a radio report?
Demonstrate how to use pronouns, connectives, and tense to make sure that paragraphs are cohesive across the story.
Compare the structure of different reports produced by the class to identify those that are most effective in terms of presenting the information to the particular audience.

Topic theme lesson plan: Narrative set in imaginary worlds (approx. age 8-9)

- Listen and respond appropriately to adults and their peers.
- Ask relevant questions to extend their understanding and knowledge.
- Articulate and justify answers, arguments, and opinions.
- Give well-structured descriptions, explanations, and narratives for different purposes, including for expressing feelings.
- Maintain attention and participate actively in collaborative conversations, staying on topic and initiating and responding to comments.
- Use spoken language to develop understanding through speculating, hypothesising, imagining and exploring ideas.
- Participate in discussions, presentations, performances, role play, improvisations, and debates.
- Consider and evaluate different viewpoints, attending to and building on the contributions of others.
- Drawing inferences such as inferring characters' feelings, thoughts, and motives from their actions, and justifying inferences with evidence.
- Predicting what might happen from details stated and implied.
- Participate in discussion about both books that are read to them and those they can read for themselves, taking turns and listening to what others say.
- Discussing writing like that which they are planning to write in order to understand and learn from its structure, vocabulary and grammar.
- Organising paragraphs around a theme.

- In narratives, creating settings, characters, and plot.

Activities

Supplement '*The Dark Side of Elpmis*' with other space based science fiction texts especially for the objectives to do with character and figurative or expressive language. This unit helps children plan a story that involves solving a problem in a science fiction setting. It acts as a good stimulus to writing as well as helping children understand how the setting can impact on the plot. A class could write a chapter book about the whole simulation if main characters were agreed. Each group could take a different part of the story. The 12 and 24 caption frames could help classes plan this.

- Read and discuss a range of texts with fantasy settings.
- Pick out and list common features and themes from science fiction stories. Explore how the setting influences the happenings in such stories. Explore how the authors have created different atmospheres and moods through their use of language.
- Create fantasy settings using photo-editing software. Experiment with different effects.
- Describe the setting so that the details and the choice of vocabulary create different atmospheres.
- When the simulation is finished discuss with the children how to turn part of the simulation into a story.
- Use one of the incident reports to mission control or part of the 12 frame story caption. This will help the children organize their work into paragraphs.
- Demonstrate how to use pronouns, connectives, and tense to make sure that paragraphs are cohesive across the story.

This could be done as a chapter book with different groups writing different parts of the story.