



Rich assessment tasks

Preparation

The five activities described in this section have been designed as rich assessment tasks, based on ideas from the *Interpersonal Development*, *Personal Learning*, *Mathematics*, *Science*, *English*, *ICT* and *Thinking* domains of the Victorian Essential Learning Standards.

Each activity requires preparation before the visit and additional work when back at school.

Decide with your students whether they will be working in groups, the types of exhibits they may need to focus on during their visit, and how they will present their completed tasks.

You may wish all students to complete the same activity or you may decide to allow them to choose one for themselves. The activities have flexibility to cater for individual needs and interests. You may also wish to select a particular VELS domain as the focus of your visit.

Rich assessment task resources

Assessment rubrics, a work log, and a team agreement/contract are included in this kit to assist teachers to assess and promote student learning. They are provided in Microsoft WORD format, so that they can be modified to cater for the individual needs of students and the focus of their studies. Decide which of these resources are relevant to your students' needs and the curriculum areas you wish to cover before your visit. Spend some time in class with your students discussing the requirements associated with these materials.

The five rich assessment tasks and their assessment rubrics

- 1. Designing spacecraft of the future Refer to Rubric 1**
- 2. Star Wars Galactic Sale Refer to Rubric 2**
- 3. Hotel Space Station Refer to Rubric 3**
- 4. Reviewing Star Wars: Where Science Meets Imagination Refer to Rubric 2 or 3**
- 5. Star Wars – Fact or fiction? Refer to Rubric 2 or 3**



Create your own rubrics with your students

A very useful educational activity is to allow students to develop their own rubrics for a particular task. This allows them to identify the key features or skills relevant to the task and promotes self-reflection on their work habits and skill levels.

You could start this process by asking students to consider the following:

- What are some of the key features that you would expect to find in a really good presentation? List these.
- Discuss your answers with your team and together come up with a final list.
- Discuss your ideas with the rest of the class.

Key features of rich assessment tasks 1-5 could include:

- working with others
- organisational skills
- self-reflection
- written content
- visual or verbal content.

You may also want students to focus on particular VELS domains and dimensions.

You could prepare a template ('Make your own rubric') and ask students to write brief statements that describe observations to be made for each feature. Use Rubrics 1-3 as a guide. Remember that whatever choices are made, they need to be meaningful to students and able to be measured or clearly observed.

Working in teams

If your students are working in teams, you may find that the sample 'Team agreement /contract' provided is a useful resource. By allowing all members of the team to work on the contract, students will develop an understanding of how they are responsible for working together.

Developing organisational skills

If you are encouraging students to enhance their organisational skills while working on the activities provided, you may find that the sample 'Work log' is useful.

If you wish to explore the world of electronic mind mapping with your class, you may wish to consider using Bubbl.us which is a simple, free web application that allows your students to brainstorm online. The program allows you to create mind maps online and students are able to share their work.

For more details go to <http://www.bubbl.us/>

A similar program that has a free version is Mindmeister.

For more details go to: <http://www.mindmeister.com/home/premium>



Activity 1: Designing spacecraft of the future

Your Task

To design a vehicle for travelling through space or for travelling on the surface of planets.

As part of your final presentation, you will need to provide a plan of your craft – both a bird's eye perspective and a side view. All measurements will need to be included (take into account scale factors). All special features of your craft will need to be highlighted with an explanation of how they work.

While you are at *Star Wars: Where Science Meets Imagination*, your task will be to gather all the information relevant to your project. You should also use your Scienceworks visit to get ideas about what your craft could look like, how it would work and what obstacles it would need to overcome to work on different planets.

After discussion, decide on the format that your final presentation will take.

Preparing for your visit (pre-visit)

Brainstorm a list of things to look out for in the exhibition – What sorts of ideas and information should you focus on to help your research for this project? You may wish to take photographs of equipment or technology found in the exhibition that you will incorporate into your design. You could use these to help you explain how your craft works.

Prepare a template that will help you to collect all the observations you need to make during your visit. It could contain the key questions you need to address or use key words to remind you of the information you need to collect.

Decide if you will be writing your observations or using other means. For example, could you record your observations on your mp3 player, mobile phone or other equipment?

Will you be working in groups? Discuss how you will divide jobs.

- Who has which role?
- Who will collect what particular information during your visit and how will you collect this information?

(Teachers: refer to the Team Agreement and Assessment rubrics in this education kit).

You may choose to explore further....

- What are the essential features needed for a craft to travel through space or for travelling on the surface of planets?
- What are the current technological disadvantages/difficulties that prevent us from reaching the outer planets?
- How do scientists propose that we could send people to the outer planets?



During your visit

Make sure you look at as many of these exhibits as you can, during your visit:

- Maglev Engineering Design Labs
- Today's Spacecraft
- Millennium Falcon*
- Starships (Empire)
- Starships (Rebel)
- Real World Speeders
- X-wing
- Luke's Landspeeder
- Today's Spacecraft showcase
- Real-world Speeders showcase
- Moving Down the Skyway Interactive

Possible extension work for this project

- Construct a scale model of the craft.
- Using software such as 'Movie Maker' or 'PowerPoint', students create a TV advertisement for their craft.

Resources

An introduction to Movie Maker:

<http://www.microsoft.com/windowsxp/using/moviemaker/getstarted/DLmovies.msp>
<http://www.microsoft.com/windowsxp/using/moviemaker/create/polish.msp>

A useful website to assist students with digital storytelling:

<http://www.adobe.com/education/instruction/adsc/>

Curriculum Links: *Mathematics, English, ICT, Science, Interpersonal development, Personal Learning.*



☰ **Worksheet: Designing spacecraft of the future**

Gathering design ideas

Use this worksheet to draw, sketch or write design ideas from the exhibition that you could use for your spacecraft. (*You could use the words below as prompts or simply write your own*). If you have a camera, use these words to prompt you to choose your shots.

Overall shape

Size

Special features

Wing shape

Cockpit design

Engine design

Landing gear



Activity 2: Star Wars Galactic Sale

Your Task

You will be advertising key *Star Wars* items for an amazing galactic sale!

- Explore the categories of *Star Wars* items for sale as described below. You may think of others that could be added to this list.
- Make a list of features that are used in effective advertisements. Use these key ideas in your ads.
- For each of the *Star Wars* items that you are advertising, add a detailed description of the item and its uses, and explain why people will want to buy it.
- You may wish to take photographs of these items on your visit to the exhibition to add to your advertisement.

Land vehicles – Used & New

For example, how could you promote Luke Skywalker's original landspeeder to convince someone to buy it? Compare its features with those of other vehicles to promote it.

Spacecraft – Used & New

Repeat the exercise above with the *Millennium Falcon* or a Star Destroyer.

Robots – Used & New

Choose at least one robot from the exhibition. What are some of the features of this robot? What can it do? What can it be used for?

Why would a biological entity (e.g. human) need a robot?

Clothing – Used & New

Choose at least two examples of clothing seen in the exhibition to sell in your advertisement. You could include an explanation of how they are well suited for use in particular climates or environments.

Galactic real estate: Planets for sale

What are the conditions like on this planet?

What are some of the views from the planet?

Why would you want to live here?

Can you think of other categories to add to your advertisement?



Preparation for your visit (pre-visit)

Collect any information that may help you to advertise your items. For example, for the 'Spacecraft – Used & New', you may want to research how some of the spacecraft in the exhibition work so that you can compare their features.

What other information could you research before your visit? Discuss this with your class or team.

Before your visit, think about what sorts of information you will need to look for during the exhibition. Prepare a list. Discuss this with your class or team.

Will you need to take photographs of the items in the exhibition for your ads? Discuss this with your class or team.

Will you be working in teams?

If so, discuss how you will divide jobs. Who has which role? Who will collect particular information during your visit?

(Teachers: refer to the Team Agreement/Contract and Assessment rubrics in this education kit).

During your visit

Make sure you look at as many of the exhibits listed below as you can. Choose those items that you will advertise and use the worksheet on the next page to record information about them.

- Maglev Engineering Design Labs
- Today's Spacecraft
- Millennium Falcon*
- Starships (Empire)
- Starships (Rebel)
- Real World Speeders
- X-wing
- Luke's Landspeeder
- Robot Object Theatre
- Robot Engineering Design Lab
- Today's spacecraft showcase
- Real-world Speeders showcase
- Hoth Real World
- Living on Tatooine
- Building Communities Interactive
- Moving Down the Skyway interactive
- Living on Kashyyyk
- Padmé showcase

To make sure your group gets a chance to see most of these exhibits, you may want to divide up the list amongst your team members. Do this before your visit.



Worksheet: Star Wars Galactic Sale

Information search

In columns 2 and 3, write down the *Star Wars* items that you will be advertising. There is space for 12 items. Then record the information for each item that you will need to prepare your advertisements.

Category of sale item	Item 1	Item 2
Land Vehicles – Used & New	Name of item: ----- Information:	Name of item: ----- Information:
Spacecraft – Used & New	Name of item: ----- Information:	Name of item: ----- Information:



Category of sale item	Item 1	Item 2
<p>Robots – Used & New</p>	<p>Name of item: -----</p> <p>Information:</p>	<p>Name of item: -----</p> <p>Information:</p>
<p>Clothing – Used & New</p> <p><i>(Please Note: All used clothing must be treated for stellar mites before it is placed on sale)</i></p>	<p>Name of item: -----</p> <p>Information:</p>	<p>Name of item: -----</p> <p>Information:</p>



Presenting your advertisements

Discuss making a slide show with your class or team to show all the ads that have been created.

Extension ideas

Produce a TV advertisement selling one or more of the items listed. You could use Movie Maker for video editing or Adobe Premiere Elements. Examine a TV advertisement selling an item. What are some of the properties of a TV advertisement that make it effective?

Write a script about what you are going to say in your advertisement.

Resources

For *Digital Storytelling in the Classroom*, and a classroom tutorial on *Adobe Photoshop Elements* and *Adobe Premiere Elements*, go to:

<http://www.adobe.com/education/digkids/storytelling/tutorial.html>



Activity 3: Hotel Space Station

The forces of good have captured a Death Star and converted it into a space station orbiting one of the *Star Wars* worlds. This isn't a place lacking in comfort – in fact, it's a luxurious place to stay when you are holidaying in space. You are in charge of this new facility. Your job is to attract as many customers as possible to your venue.

Your Task

You need to design an advertisement that promotes your venue. Consider the following:

1. What facilities have you installed on your space station for your guests? Consider:
 - What can your customers expect to eat?
 - Are there any limits to the amount of water they can use?
 - How is human waste processed in this facility?
 - What about sleeping quarters – what are they like?
 - How is energy produced to meet all the needs of the space station and its passengers?
 - How is a safe environment maintained within the station, considering all the hazards of living in space?
 - How are all the things required to keep humans alive maintained in this station?
 - What are some of the safety features of the space station?
2. Where is your space station located and how do your customers get there?
You may wish to consider:
 - What are some of the views from the space station?
 - What are some of the views and highlights your customers will see on the way to your space station?
 - Where do the daily shuttle cruises to nearby attractions take you?
What do you do once you arrive at these destinations?
What do the shuttle vehicles look like?
3. What are robots used for in this hotel?

Can you think of any other information that your customers may need to be persuaded to holiday at your venue?

Use a mind map (see below) to help you plan the content that you will want to include in your advertisement.



Select a Project Format

Discuss the format you will use for this task with your teacher.
Here are some suggestions.

Design a pamphlet

Incorporate your photos of exhibits and text from the exhibition.

1. Think about the size and layout of the pamphlet.
Incorporate photos/illustrations and text.
2. Decide on your content.
3. What will the key headings in your pamphlet be?
4. What photos/illustrations do you need to include?
5. Decide on font type, color and style.
6. Map out a timeline for completion of tasks.

Produce a TV advertisement

Use your images/footage taken in the exhibition.

1. Identify the main points you want to communicate to your audience.
2. Identify approach – e.g. Will there be narration or written text?
3. Storyboard the main scenes.
4. Develop the text/script.
5. Identify material/equipment required to complete task (video camera/mobile phone, microphone for narrations, set design, sound effects/music, etc).
What software will you use to edit your production? For example, you could use 'Movie Maker'.

For an introduction to Movie Maker go to:

<http://www.microsoft.com/windowsxp/using/moviemaker/getstarted/DLmovies.msp>

<http://www.microsoft.com/windowsxp/using/moviemaker/create/polish.msp>

A useful website to assist students with digital storytelling can be found at:

<http://www.adobe.com/education/digkids/storytelling/index.html>

6. Identify any training needed so that students can operate the equipment they require to complete the tasks they have been allocated. Discuss who will carry out the training and when.
7. Allocate tasks to group members.
8. Map out a timeline for completion of tasks.

Produce a PowerPoint presentation

Use your images/footage taken in the exhibition.

1. Identify the main points you want to communicate to your audience.
2. Identify approach/format – e.g. Will a team member narrate the presentation, how much written text will be used? What type of images (or visual information) will you use? Will you use special sounds or music?
3. Decide on the layout or look of your slides.
4. Plan the PowerPoint by storyboarding the slides.
5. Develop the text/script.
6. Identify material/equipment required to complete task (video camera, microphone for narrations, set design, etc).
7. Allocate responsibilities to group members.
8. Map out a timeline for completion of tasks.



Preparation for your visit

Will you be working in teams?

If so, discuss how you will divide jobs. Who has which role? Who will collect particular information during your visit?

(Teachers: refer to the Team Agreement/Contract and Assessment rubrics in this education kit).

Project Timeline

Mind map/Plan - *Due Date:* _____

1st draft - *Due Date:* _____

2nd draft (if needed) - *Due Date:* _____

Final copy - *Due Date:* _____

Can you think of any other important stages of your project preparation that should be included in your timeline? List these below and assign them dates in your timeline.

Discuss these stages and dates with your teacher and/or other team members.

Before you start

1. Create an organization chart for your project taking into account the key dates/stages you discussed above to keep track of your progress. This will form part of your assessment.
2. Class discussion - What criteria do you feel this project should meet?
3. As a class, create an assessment rubric for your project.

During your visit

You may use mind maps (see next page) to help you collect some of the information you need for your task. Consider the questions below when searching for ideas in the exhibition:

- What are some of the technologies on display in the exhibition that you could use in your hotel? How could you use these?
- What are some of the worlds in the *Star Wars* story? What are conditions like on these worlds? How could your clients visit these worlds? How would they get there? What type of clothing would they need to wear?
- What are some of the characteristics of robots that would make them very useful to have working on the hotel space station?
- Is there any information about spaceships in the exhibition that could be used for the hotel space station?
- Before your visit you may wish to make a list of photographs of exhibits to take for inclusion in your brochure/presentation.

Make sure you look at as many of the exhibits listed in each mind map worksheet as possible during your visit (see below). To make sure your group gets a chance to see most of these exhibits, you may want to divide the list among your team members. Do this before your visit.



Mind maps

Make sure you look at as many of these exhibits as you can to complete this mind map during your visit.

- Millennium Falcon*
- Starships (Empire)
- Starships (Rebel)
- Real World Speeders
- Luke's Landspeeder
- Robot Object Theatre
- Robot Engineering Design Lab
- Maglev Engineering Design Labs
- Today's Spacecraft showcase
- Real-world Speeders showcase

Technologies



Make sure you look at as many of these exhibits as you can to complete this mind map during your visit.

- Hoth Real World / Living on Hoth
- Living on Tatooine
- Living on Coruscant
- Kashyyyk Showcase
- Building Communities Interactive

Worlds



Make sure you look at as many of these exhibits as you can to complete this mind map during your visit.

- Robot Object Theatre
- Robot Engineering Design Lab
- Human or Machine? interactive
- Robots – introductory showcase
- Walking Robot interactive
- Centre of Mass interactive
- Robot Senses interactive
- Responsive Face interactive

Robots



Make sure you look at as many of these exhibits as you can to complete this mind map during your visit.

- Today's Spacecraft
- Today's Spacecraft showcase
- Millennium Falcon*
- Starships (Empire)
- Starships (Rebel)
- Real World Speeders
- X-wing
- Luke Skywalker's Landspeeder

Spaceships



Activity 4

Reviewing *Star Wars: Where Science Meets Imagination*

Your Task

You and your team of experts are to review *Star Wars: Where Science Meets Imagination* for your school paper or the school media channel.

Preparation for your visit

Together with your teacher, discuss your team and the roles each person will undertake. More than one student can work on a role and you can add to the list below if you can think of other duties that need to be performed.

With your class, discuss these roles further.

Chief Editor – oversees the overall production, sets timelines and coordinates the efforts of the team.

Editors – subdivided into spelling editors, grammar editors, structure/writing format editors (paragraphs etc), punctuation editors....

Reporters – interview people who saw the event (exhibition) or are involved in the event (exhibition).

Researchers – (when necessary) do background research. They use the Internet, books and newspapers to do follow-up research.

Copy setters – decide how the layout will look – do a page view and prepare it on the computer.

Photographers/Illustrators/Filming crew - in charge of finding or producing suitable visuals.

What other roles are needed for a newspaper/media production?

Create a checklist for each written piece to make sure it has been seen by each person.

Make sure that everyone in your team can answer: 'What information will I need to collect from the exhibition during my visit that is relevant to my assigned role?'

Each person should create a checklist of the tasks they will focus on during their visit to the exhibition and in the pre and post production phases of their presentation.

Team Discussion

What exactly do we want as the focus of our article/media production?

What are some of the main headings or parts to the article/presentation?

What format will our final presentation be?

- newspaper article
- role play
- Movie Maker presentation
- Vodcast — Video-On-Demand-casts



Star Wars: Where Science Meets Imagination **Student activities**

Online resources

For an introduction to Movie Maker:

<http://www.microsoft.com/windowsxp/using/moviemaker/getstarted/DLmovies.msp>

<http://www.microsoft.com/windowsxp/using/moviemaker/create/polish.msp>

A useful website to assist students with digital storytelling:

<http://www.adobe.com/education/digkids/storytelling/index.html>

For an introduction to making vodcasts:

(This site uses Mac computers)

<http://www.macworld.com/article/46066/2005/07/howtovodcast.html>

Newspaper format

Create your own newspaper layout or use the template provided on the next page.



The Daily News

Story Heading

Add your photograph here



Activity 5: Star Wars - Fact or Fiction?

Your Task

To explore the connections between real world science and *Star Wars*, using the exhibition as a prime means of gathering evidence to support your point of view.

Discuss the approach you will use for this task with your teacher. For example, you could use one of the following formats:

- Survey other students in the class to find out what they consider to be real science in *Star Wars*, and what they consider to be fiction.
- Debate: *Star Wars is a truly fictional story based on fictional ideas, themes, science and technologies.*
- Prepare a PowerPoint presentation
- Conduct a TV interview that students act out and video record.

Note that you may also wish to take video footage or photographs of exhibits in *Star Wars* to add to your presentation.

Resources

An introduction to Movie Maker:

<http://www.microsoft.com/windowsxp/using/moviemaker/getstarted/DLmovies.mspx>

<http://www.microsoft.com/windowsxp/using/moviemaker/create/polish.mspx>

A useful website to assist students with digital storytelling:

<http://www.adobe.com/education/digkids/storytelling/index.html>

Free music loops: <http://www.royaltyfreemusic.com/free-music-loops.html>

Tutorials on podcasting, adding audio tracks to video clips or to PowerPoint presentations: <http://www.royaltyfreemusic.com/tutorials/>

Free sound effects: <http://www.royaltyfreemusic.com/sound-effects.html>

Preparing for your visit

Will you be working in groups? If so, discuss how you will divide jobs.

- Who has which role?
- Who will collect what information during your visit and how will you collect this information?

You may want to use team contracts to organise the roles and tasks of each team member. A Team Agreement/Contract template is included in this education kit.



During your visit

Use your time in the exhibition to explore the connections between real world science and the *Star Wars* films. The exhibits in the exhibition *Star Wars: Where Science Meets Imagination* can assist you to obtain concrete examples to support your arguments. If you have chosen the survey approach to this task, you could survey people before and after their visit to see if they have changed their minds. You could also ask people about other aspects of the exhibition if you wish. Discuss your ideas with your team mates and your teacher.

During your visit, explore the themes of the exhibition and any possible connections/links to real science and technology. Are the exhibits from the *Star Wars* films based on some truths about the real world or are they completely make-believe? As you look through the exhibition, gather information to help you support your point of view. You may use the Fact or Fiction Worksheet (see below) to organise your notes, or explore other means of collecting evidence. For example, could you record your observations on your mp3 voice recorder, mobile phone or other equipment?

Make sure that you look at as many of these exhibits as you can:

- Robot Object Theatre
- Robot Engineering Design Lab
- Star Wars* Medical
- Maglev Engineering Design Lab
- Building Communities
- Moving Down the Skyway
- Human Machine
- Real World Medical
- Robot – Intro theme
- Robot Line-up
- Walking Robot
- Centre of Mass
- Robot Senses
- Responsive Face
- Real World Robots

To make sure your group gets a chance to see most of these exhibits, you may want to divide the list amongst your team members. Do this before your visit.



Worksheet: Fact or Fiction?

Which aspects of the following themes/exhibits/ideas are fact and which are fiction?
Two ideas have been suggested for you. There is space for more overleaf.

Theme/Idea	Fact	Fiction
<ul style="list-style-type: none">• Levitating vehicles (eg Luke Skywalker's landspeeder)		
<ul style="list-style-type: none">• <i>Star Wars</i> Robots		



Star Wars: Where Science Meets Imagination
Student activities

Theme/Idea	Fact	Fiction
• _____		
• _____		
• _____		
• _____		



School-based activities

The following activities can be used to extend students' knowledge and understanding either before or after your visit to *Star Wars: Where Science Meets Imagination*.

1. Living in Space

The *Galactic Endeavour* is the latest spaceship to be added to the Australian fleet. It's not the largest ship on the fleet but it carries 643 souls, including the greatest scientific minds from the CSIRO, and has some of the latest navigational technologies. At the helm is Captain Bana, renowned as one of the greatest explorers of this decade. Not a bad sort, as long as you don't get him angry or do your job inefficiently.

You are the environmental officer on this ship. Your task is to maintain the ship's environmental conditions at the right levels to support human lives.

- What sorts of things would you need to monitor to do your job properly?
- How are the crews' shifts arranged in space, where there is no day or night?
- When the crew needs to use 'biofreeze' to travel beyond the speed of light, how do they stay alive?
- How are the dietary requirements of the crew met on long journeys?

2. Robots

Welcome Mr U. R. Arobot. This is your life!

You're the latest model 'AY-874A *Urban Use*' robot and you've been selected as the guest for the famous *This is Your Life* show on TV. During your interview the host will ask you to address the following questions (so get your answers ready!):

Host:

This is the sound of the robot lab assembly line where you were created and received your subsequent programming. Tell us a little about your first few days of 'life'. What were they like?

Can you tell us a little bit about the special programming that you received?

*Your model replaced the 'AY- 873C *Urban Use*' robot. What advanced features do you possess compared to the now defunct earlier model?*

In 4009, at the tender age of 3 years, your programming was upgraded to allow you to help in the exploration of new planets. What new features were added to your programming and external peripherals to help you with this new role?

*One of your ancestors was the 'AY- 500 *Waste Management*' robot. Tell us about the sort of work done by that early robot.*



3. Journey to Mars

Congratulations! You have been chosen as the first human to travel to Mars.

- How will you get there? What type of spaceship will you be travelling on?
- With our current technology, how long will it take you to get there? How does the advanced technology in your spaceship help you to travel faster?
- What is the source of fuel for your spacecraft?
- What are some of the environmental challenges that you will need to overcome on the planet's surface? How will you overcome these challenges?
- Are you likely to find any life on Mars? Explain.