Integrated Design and Technology, Science and Mathematics Learning Area Unit

UNIT TITLE:	Using matter.
BIG QUESTION	How can we apply our knowledge of solids, liquids and gasses to create tools for our real world?
UNIT OUTLINE	In this unit students will investigate the following questions: • This unit is designed to cover the following curriculum areas: Design and Technology / Science / Mathematics • Investigate characteristics and properties of a range of materials, systems,components, tools and equipment and evaluate the impact of their use.
YEAR LEVEL ACHIEVEMENT STANDARD	DESIGN and TECHNOLOGY By the end of Year 6, students describe competing considerations in the design of products, services and environments, taking into account sustainability. They describe how design and technologies contribute to meeting present and future needs. Students explain how the features of technologies impact on designed solutions for each of the prescribed technologies contexts. **Students create designed solutions for each of the prescribed technologies contexts suitable for identified needs or opportunities. They suggest criteria for success and use these to evaluate their ideas and designed solutions. They combine design ideas and communicate these to audiences using graphical representation techniques and technical terms. Students record project plans including production processes.** They select and use appropriate technologies and techniques correctly and safely to produce designed solutions. SCIENCE (OR OTHER) By the end of Year 5, **students classify substances according to their observable properties and behaviours.** They explain everyday phenomena associated with the transfer of light. They describe the key features of our solar system. They analyse how the form of living things enables them to function in their environments. **Students discuss how scientific developments have affected people's lives, help us solve problems and how science knowledge develops from many people's contributions.**

	Students follow instructions to pose questions for investigation and predict the effect of changing variables when planning an investigation. They use equipment in ways that are safe and improve the accuracy of their observations. Students construct tables and graphs to organise data and identify patterns in the data. They compare patterns in their data with predictions when suggesting explanations. They describe ways to improve the fairness of their investigations, and communicate their ideas and findings using multimodal texts.

DEVELOPING INQUIRING AND REFLECTIVE LEARNERS

☒ Community Contributor	☒ Effective Communicator	☒ Designer and Creator
☐ Leader and Collaborator	☒ Active Investigator	☒ Quality Producer

CROSS CURRICULA PRIORITIES

Catholic Ethos	***Aboriginal and Torres Strait Islander Histories and Cultures***	***Asia and Australia's Engagement with Asia***
Sustainability Education	***Social Emotional Learning***	***Inclusive Education***

GENERAL CAPABILITIES

Literacy	***Numeracy***	***Information and Communication Technology***	***Critical and Creative Thinking***

Ethical Behaviour	***Personal and Social Competence***	***Intercultural Understanding***

LEARNING AND TEACHING STRATEGIES

WEEK	1	2	3	4	5	6	7	8	9	10

SCIENCE CONTENT DESCRIPTORS			MATH CONTENT DESCRIPTORS			TECHNOLOGY CONTENT DESCRIPTORS		
ACSSU077	ACSHE081	ACSIS231	ACMSP118	ACMSP120	ACMMG108		ACTDEK023	

LEARNING INTENTIONS	SUCCESS CRITERIA
Students will: • Understand that all matter exists in one of three states • Explain how some common solid materials take advantage of their properties.	I can: • Name the three states of matter. • Answer questions about materials and their properties.

Engage → **Explore →** **Explain →** **Elaborate →** **Evaluate**

ENGAGE	RESOURCES
FOCUS LA: Science *This is a focus question that can guide the learning intention.* What are the defining properties of solids, liquids and gasses? **ACTIVITY** Introduce students to a mystery bag and explain that inside the bag are various items for them to classify as a solid, liquid or gas. Hold up an item from the bag and ask the students to describe its state of matter. Explain their thinking to their partner. Possible questions that may be posed include: Why do you think it is that state of matter? What features does it have. Ask students to be as specific as possible. Eg a can of soft drink may be solid, the can, liquid (contents) or gas (the bubbles). Create a whole class KWL chart to explore what students already know about 'Solids', 'Liquids' and 'Gases'. Make a list of questions that students have about matter. These charts will form a word wall and words/ideas will be added to it throughout the unit. FOCUS LA: Design and Technology How do some common solid materials take advantage of their properties? **ACTIVITY** Introduce students to some common materials such as glass, concrete, plastic, steel, aluminium and timber. Pose some logical and nonsense questions such as glass is hard and heavy so why	Student Resources: Can of soft drink Items for a mystery bag Teacher Resources: www.scienceweb.asta.edu.au **ASSESSMENT OPPORTUNITIES** Create Venn diagrams, tables or other suitable data representations to classifiy items used and described as part of the above activities.

don't we have hammers made from glass? Plasticene is waterproof, won't rust and won't burn, so why don't we build houses from it? (This could be extended to a writing activity of creating ridiculous tools that would never work. Eg the play doh screwdriver, the saw made from rubber, FOCUS LA: Mathematics Data representation **ACTIVITY** Create Venn diagrams, tables or other suitable data representations to classifiy items used and described as part of the above activities.	
TECHNOLOGIES LANGUAGE	
Properties	

LEARNING AND TEACHING STRATEGIES

WEEK	1	2	3	4	5	6	7	8	9	10

SCIENCE CONTENT DESCRIPTORS			MATH CONTENT DESCRIPTORS			TECHNOLOGY CONTENT DESCRIPTORS		
ACSSU043	ACSHE083	ACSIS087	ACMMG108				ACTDEK023	

LEARNING INTENTIONS	SUCCESS CRITERIA
Students will: • Develop a shared understanding of the properties of the three states of matter. • Ivestigate characteristics and proerties of tools.	I can: • Name the properties of a solid, a liquid and a gas. • Identify common tools and the properties they utilise.

Engage → **Explore →** **Explain →** **Elaborate →** **Evaluate**

ENGAGE

FOCUS LA: Science

What is the difference between a solid, a liquid and a gas?

ACTIVITY

Looking at liquids: Introduce the concept of 'liquids'. Brainstorm a list of 'liquids'. List responses in the class science journal.

Ask students to think of words to describe the properties of the liquids. Prompt students with the following questions:

- Are there any liquids that don't have water in them? Name them.
- What are some liquids that are thick, and some that are thin?

Record students' ideas on science wall.

Teacher works through procedure of experiment with students. Students write up experiment procedure in science books highlighting the aim, materials, procedure, results and reflection.

Introduce the collected liquids and powdered laundry detergent. Explain that students will be working in collaborative learning teams to explore all of the substances to decide which are not liquids (the powdered laundry detergent is the only one that is not a liquid). Ask students to think of three or more questions that they will use when exploring the different materials.

Discuss the types of things that students might look at or do to help make their decision, such as, turning the container upside down; shaking the container; using a magnifying glass to look carefully at each material; tipping the container and

RESOURCES

Student Resources:

Images of common tools including pneumatic and hydraulic and water pressure tools.

Teacher Resources:

ASSESSMENT OPPORTUNITIES

Formative assessment (technology); Mix 'n' Match activity.

seeing how long the substance takes to flow to the other end; pouring the substances into a new cup and observing what happens as they flow into the cup. Students must record their responses to their questions in their 'results' section of their experiment procedure. Conduct the experiment and share findings as a whole class. Add important findings to word wall/class chart. **ACTIVITY** Looking at solids: Teacher highlights the objective for the lesson: *to explore the properties of different solid materials and record student observations in a table.* Introduce a display of a variety of solid materials (selection of solids: soap, chalk, play dough, a block of wood, a sponge, jelly snake, elastic band, marbles, flour, laundry powder, rice etc). Ask students to describe some of the properties of the samples. Record responses in science books with corresponding pictures. Explain that students will be working in a collaborative learning team to explore some of the properties of materials that the objects are made from and compare them with properties of liquids. Teacher works through procedure of experiment with students. Students write up experiment procedure in science books highlighting the aim, materials, procedure, results and reflection. Explain that students will be filling out a table ('Solid Science' worksheet) to record what happened to each material for each test. Discuss the purpose and features of a table. Model how to complete an entry for one of the materials. Discuss the word 'hard' and what it means to students. Explain that scientists consider 'hard' to mean how easily a substance is scratched or worn away. For example, the hardest substance in the world is a diamond and it can only be scratched by another diamond. Teacher works through procedure of experiment with students. Students write up experiment procedure in science books highlighting the aim, materials, procedure, results and reflection. Complete the investigation and discuss results as a whole group. Prompt students with the following questions: • What do the different solids have in common? • What is different about them? • Are powders solid? How do we know? What properties do they have in common with other solids? Add to class science wall display.	

ACTIVITY

Looking at gasses: Prompt students to brainstorm different types of gases that they are aware of. Introduce the balloon. Discuss what is in the balloon and how it is a combination of several different gases including nitrogen, oxygen and carbon dioxide.

Ask students if the balloon is a solid or a liquid and why they think that. Discuss how the gas in the balloon is bounded by the balloon, which is a solid. Ask students if they can think of other examples where a gas is bounded by a solid (eg: gases in a exhaust pipe, air in a basketball, air in a bicycle tube).

Introduce the transparent cup and ask students if they think there is anything inside it. Tip the cup upside down and repeat the question.

Explain that students are going to work in collaborative teams to explore the properties of gas. Teacher works through procedure of experiment with students. Students write up experiment procedure in science books highlighting the aim, materials, procedure, results and reflection.

Introduce the worksheet 'tissues in a cup'. Read through with students and model how to complete if necessary.

Students must complete an annotated drawing to show what happened. Complete the investigation and share results with whole class.

After discussions of investigations have concluded, re-introduce the balloon. Prompt students with the following questions:

- Where would the air go if I opened this balloon?
- Where would the water go?

Update word wall/class display etc

FOCUS LA: Design and Technology

Look at some common tools used in the home or industry that utilise compressed air, water pressure or properties of solids.

ACTIVITY

Students complete a mix and match, matching images of common tools with the property they utilise (compressed air, water pressure, or the hardness of solids).

TECHNOLOGIES LANGUAGE
Tools Work Pressure Hydraulic Pneumatic

LEARNING AND TEACHING STRATEGIES

WEEK	1	2	3	4	5	6	7	8	9	10
SCIENCE CONTENT DESCRIPTORS			**MATH CONTENT DESCRIPTORS**				**TECHNOLOGY CONTENT DESCRIPTORS**			
ACSSU077	ACSHE083	ACSIS087	ACMNA099		ACMMG108		ACTDEK023	ACTDEP024	ACTDEP025	ACTDEP026
							ACTDEP027	ACTDEP028		

LEARNING INTENTIONS	**SUCCESS CRITERIA**
Students will: • Understand that the properties of gasses and liquids can be applied to real life situations to do work. • Understand that pneumatic and hydraulic tools take advantage of compressed air and the fact that liquids cannot be compressed to do work. • Understand that the hardness of a solid material may make it useful as a tool.	I can • Answer questions about air and water power when observing images or clips of them in action. • Describe how air and water power may be used to do work.

Engage → **Explore →** **Explain →** **Elaborate →** **Evaluate**

ENGAGE	**RESOURCES**
FOCUS LA: Science *This is a focus question that can guide the learning intention.* How are gasses and liquids used to do work? How hard is hard? **ACTIVITY** View the following link: https://www.youtube.com/watch?v=BFYkCz1q-b0 Discuss topics raised and answer relevant questions as a whole class. **ACTIVITY** Look at Moh's hardness scale. (refer to printable graphic at bottom of page) http://www.nature.nps.gov/geology/education/concepts/minerals.cfm	Student Resources: ipads Teacher Resources: https://www.youtube.com/watch?v=BFYkCz1q-b0 http://www.nature.nps.gov/geology/education/concepts/minerals.cfm **ASSESSMENT OPPORTUNITIES**

Students bring a range of solid materials to class and rank them from hardest to softest and then justify their rankings. FOCUS LA: Design and Technology **ACTIVITY** Investigate characteristics and properties of a range of materials, systems, ,components, tools and equipment used in farming and mining. In pairs research and complete student activity sheet: Characteristics (See Appendix) Technology extension activity: Design Challenge – Design a small vechile that can be powered by air eg: a balloon or bicycle pump. (This activity is intended as a non-assessable activity. FOCUS LA: Mathematics Choose appropriate units of measurement for length, area, volume, capacity and mass. **ACTIVITY** Students use ipads to takes photos of solids, liquids and gasses. They then use a relevant app to annotate the photos, recording the appropriate unit of measurement. Estimate it's measurement using the appropriate unit.	
TECHNOLOGIES LANGUAGE	
Pressure Hydraulic Pneumatic	

LEARNING AND TEACHING STRATEGIES

WEEK	1	2	3	4	5	6	7	8	9	10

SCIENCE CONTENT DESCRIPTORS			MATH CONTENT DESCRIPTORS			TECHNOLOGY CONTENT DESCRIPTORS		
ACSSU043	ACSHE083	ACSIS087		ACMMG108		ACTDEK023	ACTDEP028	ACTDEP025
						ACTDEP026	ACTDEP027	ACTDEP024

LEARNING INTENTIONS	SUCCESS CRITERIA
Students will: Design a vehicle or tool that uses their knowledge of the properties of matter that they have learnt this term. Communicate their understandings of solid, liquids and gases. Students will show this understanding by developing a set of game cards about solids, liquids and gases. Choose appropriate units of measurement for length, area, volume, capacity and mass.	I can : • Apply my understandings of the properties of matter to design a vehicle or tool. • Create a set of matching cards that matches an image to its description. • Select the appropriate unit of measurement when I am designing and constructing my vehicle or tool.

Engage → **Explore →** **Explain →** **Elaborate →** **Evaluate**

ENGAGE	RESOURCES
FOCUS LA: Science Assessment Activity Revise concepts and experiments explored throughout the unit thus far. **ACTIVITY** Teacher highlights the objective for the lesson: *for students to communicate their understandings of solid, liquids and gases. Students will show this understanding by developing a set of game cards about solids, liquids and gases.* Students will receive a copy of the worksheet 'Matter cards'. (See appendix) Explain that one card will have the illustration of a solid, liquid or gas and its matching card will have a description of whether it is a solid, liquid or gas and three properties of the object, material or substance. Model how to complete two cards. Provide time for the students to complete the assessment. When finished, students may join with other students to create a game of 'snap' or 'memory' etc. FOCUS LA: Design and Technology Assessment Activity	Student Resources: Teacher Resources: Matter cards template ***ASSESSMENT OPPORTUNITIES*** Task cards is a summative assessment activity. (See attached task and criteria sheets)

ACTIVITY Design a vehicle or tool that uses your knowledge of the properties of matter that you have learnt this term. (See attached task sheet.) FOCUS LA: MATHS **ACTIVITY** Choose appropriate units of measurement for length, area, volume, capacity and mass.	

TECHNOLOGIES LANGUAGE
Project plans Design solutions. Graphical representation. Resources. Lubricant Friction Coolant Abrasive. Corrosive. Adhesive.

LEARNING AND TEACHING STRATEGIES

WEEK	1	2	3	4	5	6	7	8	9	10

SCIENCE CONTENT DESCRIPTORS			MATH CONTENT DESCRIPTORS			TECHNOLOGY CONTENT DESCRIPTORS		
ACSSU043	ACSHE083	ACSIS087	ACMMG108			ACTDEK023	ACTDEP028	ACTDEP025
						ACTDEP026	ACTDEP027	ACTDEP024

LEARNING INTENTIONS	SUCCESS CRITERIA
Students will: • Critically reflect upon their own and other students completed designs.	I can : • Complete a peer review and a self reflection responding to the set questions.

Engage → **Explore →** **Explain →** **Elaborate →** **Evaluate**

ENGAGE	RESOURCES
FOCUS LA: Science / technology / maths Have we applied our knowledge of solids, liquids and gasses to create tools for our real world? Can we explain what solids, liquids and gasses are and how they are measured? **ACTIVITY** Students and teacher establish a learning expo to showcase designs. Students complete a peer review (see attached teacher resource) of selected designs. Students complete a self reflection responding to the following questions: • What did you think about ... at the start of the unit? • What did we want to find out about...? • What have you learnt about...? Why do you think that now...? • How did you find about..? • What activity did you enjoy the most...? • What activity did you find the most challenging? Why? • What are you still wondering about...?	Student Resources: Teacher Resources: Peer review template. ***ASSESSMENT OPPORTUNITIES*** Peer review Self reflection

TECHNOLOGIES LANGUAGE
Design criteria. Critique.

Educational Modifications

CLASSROOM ACCOMMODATIONS	FOR WHOM
Seat near teacher	
Assign student to low- distraction area	
Seat near positive peer models	
Use support groups / cooperative learning	
Use rows instead of tables	
Use learning centre	
Use of time-out	
Stand near student when giving instruction	
Arrange classroom for safe visibility, accessibility and movement	
PRESENTATION OF LESSONS	**FOR WHOM**
Adjust work load, reduce assignments or give alternative assignments	
Use visual aids with oral presentation	
Teacher gives student outlines or study guides	
Ensure regular lesson revisits/reviews	
Highlight instructions (marker or highlighter tape)	
Give clear behavioural objectives	
Ask student to repeat instructions for clarification and understanding	
Use high- impact game-like materials	
Call on student often	
Acknowledgment effort put forth	
Give reminders for student to stay on task, monitor student is on task/topic	
Use large type/font and dark ink	
Keep page format simple	
Use visual prompts	
Divide page into clearly marked sections	
Remove distractions from paper	
ALTERNATIVE EVALUATION PROCEDURES	**FOR WHOM**
Reduce number of items	
Practice completely similar questions	
Arrange for oral testing	
Have support staff administer test	
Permit student to type or use word processing	
Adjust grading criteria based on individual	
Adjusted grading option	
NOTE TAKING STRATEGIES	**FOR WHOM**
Provide student the means to record	
Arrange for note taker e.g. Aide	
Give student a copy of notes	
Provide time for periodic review of student's notes (written, dictated, word processed)	
ORGANISATIONAL STRATEGIES	**FOR WHOM**
Use calendar to plan assignments	
Use of assignment notebook or work checklist especially diary	
Daily schedule	
Give time top organise desk during class	

AM check-in to organise for the day	
Lunch-time check-in to organise for PM	
PM check-out to organise for homework	
Arrange a duplicate set of classroom material for use at home	
Develop parent/school contract	
Training in time management	
SUPPORT SERVICES	FOR WHOM
Peer tutoring	
Cross-age tutoring	
Student buddy	
Work with school officer	
Meet with staff during available times	
Teach student to monitor own behaviour	
Implement behaviour contract/reward	
Self advocacy/communication skill training	
Conflict resolution strategies	
Other _____	

Adapted with permission from Positive Partnerships PD Facilitators Guide
Module 5 Support materials

Appendix 3

Assessment Task Sheet and Criteria Sheet

Design and Technology Assessment Task Sheet

Student Name: **Year Level:**

Name of Task: **Teacher:**

Learning Area/s:
Design and Technology

Date Commenced: **Date Due:**

Type of Task:	☐ Oral	☐ Written	☐ Other
Task Conditions:	☐ Individual	☐ Pair	☐ Group Work
	☐ In Class	☐ Homework	☐ Other

Opportunity to Access:	☐ Books	☐ Notes	☐ Library	☐ Technology
Assessed By:	☐ Self	☐ Peer	☐ Teacher	

Task Description (needs to include purpose and audience)

Design a vehicle or tool that uses your knowledge of the properties of matter that you have learnt this term.

Procedure (You will)

1. Brainstorm what you think you know about solids, liquids and gasses.

List your knowledge of the properties of each of the three states of matter. (solids, liquids and gasses)

You may like to list the properties in a table eg.

SOLIDS	LIQUIDS	GASSES
• Hardness •	• Takes the shape of its container •	• Have no shape •

2. What tool or vehicle do you want to design and what is its purpose?

3. List 3-5 criteria that will you to decide if your design is successful. (eg. Does your design need to be strong, fast, move a certain distance)

4. Draw a plan for your tool or vehicle. Your plan must be annotated (eg. Use arrows showing the materials you have used and brief notes explaining why you have selected those materials.)

5. Create your vehicle or tool. If you need to modify or change your original plans, make a note of this in a different colour.

Resources:

DESIGN AND TECHNOLOGY CRITERIA SHEET TITLE

Criteria **(Through completing this task specific criteria, students demonstrate their knowledge, understanding and skills of the achievement standard)**	**A**	**B**	**C**	**D**	**E**
The student work demonstrates evidence of:					
Students invent a vehicle or tool that achieves it's intended purpose and function. (thinking)	Create a design solution suitable for identified needs or opportunities which are clearly explained and articulated.	Create a design solution suitable for identified needs or opportunities which are clearly articulated.	Create a design solution suitable for identified needs or opportunities.	Create a design of a vehicle or a tool.	With assistance create a design of a vehicle or a tool.
Students create 3-5 criteria that would make their tool or vehicle successful. (Evaluating)	States and elaborates upon specific and measurable criteria for success.	States specific and measurable criteria for success.	State criteria for success.	With some guidance students state criteria for success.	Student required support to state criteria for success.
Students evaluate their own and others work against suggested criteria for success. (Reflecting)	Students use criteria for success to evaluate their ideas and design solutions, refine their design and explain their modifications.	Students use criteria for success to evaluate their ideas and design solutions and to refine their design.	Students use criteria for success to evaluate their ideas and design solutions.	Students require some prompts to use criteria for success to evaluate their ideas and design solutions.	Students require assistance to use criteria for success to evaluate their ideas and design solutions.
Students create an annotated plan of their design idea. (Creating)	Students combine a range of design ideas to communicate to audiences using graphical representation techniques and technical terms. This might include plans from more than one perspective (plan view/side view) or drawing plans to scale.	Students select an appropriate form to communicate design ideas to audiences using graphical representation techniques and technical terms.	Communicate design ideas to audiences using graphical representation techniques and technical terms.	Communicate design ideas to audiences using graphical representation techniques.	Students require assistance to communicate design ideas to audiences using graphical representation techniques.

Feedback

Signed: Date:

Annotated Design and Technology Criteria Sheet.

Red Text indicates intent of the descriptor.

Criteria **(Through completing this task specific criteria, students demonstrate their knowledge, understanding and skills of the achievement standard)**	**A**	**B**	**C**	**D**	**E**
The student work demonstrates evidence of:					
Students invent a vehicle or tool that achieves it's intended purpose and function. (thinking)	Create a design solution suitable for identified needs or opportunities which are clearly explained and articulated. Students state how their design meets the purpose of their vehicle or tool and clearly explain why it would be useful.	Create a design solution suitable for identified needs or opportunities which are clearly articulated. Students state how their design meets the purpose of their vehicle or tool.	Create a design solution suitable for identified needs or opportunities. Students state the purpose of their vehicle or tool.	Create a design of a vehicle or a tool. Students design a vehicle or tool with no useful purpose or function.	With assistance create a design of a vehicle or a tool. Students required assistance to design a vehicle or tool with no useful purpose or function.
Students create 3-5 criteria that would make their tool or vehicle successful. (Evaluating)	States and elaborates upon specific and measurable criteria for success. For example "My vehicle needs to go this fast because…"	States specific and measurable criteria for success. For example How fast, how long for etc.	State criteria for success.	With some guidance students state criteria for success.	Student required support to state criteria for success.
Students evaluate their own and others work against suggested criteria for success. (Reflecting)	Students use criteria for success to evaluate their ideas and design solutions, refine their design and explain their modifications. Students return to their original design, make	Students use criteria for success to evaluate their ideas and design solutions and to refine their design. Students return to their original design and make modifications after	Students use criteria for success to evaluate their ideas and design solutions.	Students require some prompts to use criteria for success to evaluate their ideas and design solutions.	Students require assistance to use criteria for success to evaluate their ideas and design solutions.

	modifications and explain the reasons for their modifications after receiving feedback.	receiving feedback.			
Students create an annotated plan of their design idea. (Creating)	Students combine a range of design ideas to communicate to audiences using graphical representation techniques and technical terms. This might include plans from more than one perspective (plan view/side view) or drawing plans to scale. Students have created several simple plans from different angles and/or scale of their design that includes appropriate labels and captions.	Students select an appropriate form to communicate design ideas to audiences using graphical representation techniques and technical terms. Students have created a simple plan of their design that includes appropriate labels and captions and articulate why they have selected a particular form to present their plan.	Communicate design ideas to audiences using graphical representation techniques and technical terms. Students have created a simple plan of their design that includes appropriate labels and captions.	Communicate design ideas to audiences using graphical representation techniques. Students have created a simple plan of their design that does not include labels or captions.	Students require assistance to communicate design ideas to audiences using graphical representation techniques.

CHARACTERISTICS

NAME OF EQUIPMENT TOOL MACHINERY	
PURPOSE (WHAT IT IS USED FOR)	
PROPERTIES (IS IT A GAS OR A LIQUID? WHAT PROERTIES DOES IT UTILISE?)	
CHARACTERISTISCS (WHY HAS THIS PARTICULAR SOLID, LIQUID OR GAS BEEN USED RATHER THAN ANOTHER?)	

Images for Mix and Match Activity


NORTH
STAR


STAR


台湾原装
假一罚十
台湾
雅色5H风批


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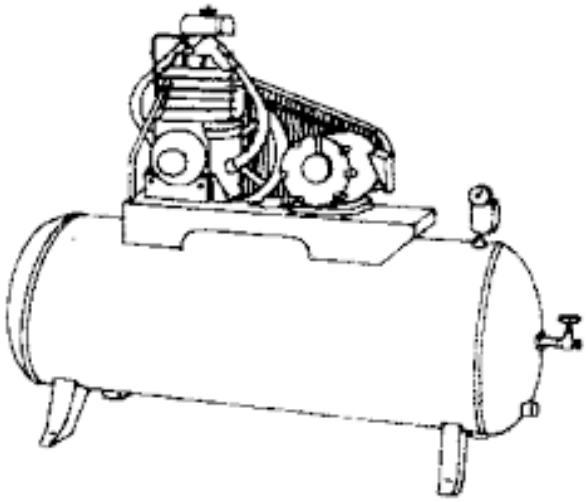

Science Assessment Task Sheet

Student Name: **Year Level:**

Name of Task: **Teacher:**

Learning Area/s:
Science

Date Commenced: **Date Due:**

Type of Task:	☐ Oral	☐ Written	☐ Other	
Task Conditions:	☐ Individual	☐ Pair	☐ Group Work	
	☐ In Class	☐ Homework	☐ Other	
Opportunity to Access:	☐ Books	☐ Notes	☐ Library	☐ Technology
Assessed By:	☐ Self	☐ Peer	☐ Teacher	

Task Description (needs to include purpose and audience)

You will communicate your understandings of solid, liquids and gases by sorting a set of game cards into the appropriate category solid, liquid or gas and justifying your placement.

Procedure (You will)

- Collect your copy of the worksheet 'Matter cards'.
- Each of your cards will have an illustration of a solid, liquid or gas.
- Look at each picture and make a judgement about which category (solid, liquid or gas) you wish to place it in.
- Justify why you have sorted the images in to the categories you have. Remember to refer to the properties of each of the three states of matter.
- Record you reasoning.

Resources:

- Visual cards
- sorting template.

SCIENCE CRITERIA SHEET

Criteria **(Through completing this task specific criteria, students demonstrate their knowledge, understanding and skills of the achievement standard)**	**A**	**B**	**C**	**D**	**E**
The student work demonstrates evidence of:					
Make a judgement about the category (solid, liquid or gas) you wish to place each picture in.	Can classify substances according to their observable properties and behaviours with 100% accuracy.	Can classify substances according to their observable properties and behaviours with greater than 75 % accuracy.	Classify substances according to their observable properties and behaviours.	Can classify substances according to their observable properties and behaviours with less than 50% accuracy.	Can classify substances according to their observable properties and behaviours with less than 25% accuracy.
After making a judgement, justify why you have sorted the images in to the categories you have. Remember to refer to the properties of each of the three states of matter.	Compare patterns in the data when suggesting explanations. These explanations analyse the properties of the matter.	Compare patterns in the data when suggesting explanations. These explanations refer to the properties of the matter.	Compare patterns in the data when suggesting explanations.	Beginning to compare patterns in the data when suggesting explanations.	Requires support to compare patterns in the data when suggesting explanations.

Helium 	Milk 	Glass jar 
Ice 	Honey 	Diesel 
Cheese 	Paint 	Sugar 

Air inside a tyre.	Soft drink.	Cement
		

Solid	Liquid	Gas