Year 7 Technology - Hangarau

**Familiarity with technology is important in today's world.**

**He hira i te ao i nāianei kia takāpuinga ki te toi.**

# Product Design and Making

# Learning about the Context

A context is a theme.

In Year 7 the context is:

## 'People and Technology'





**Task:**

1. Put a tick next to the pictures you think are technological outcomes.
2. List ten examples of technological outcomes and ten natural ones.

**context - horopaki**

**Task:**

1. Look at the photograph of the street scene above.

2. List the technological outcomes that you can see._____
   _____
   _____
   _____

3. List the features that are natural ? _____
   _____
   _____

4. List the technological outcomes might you expect to find inside the church ? _____
   _____
   _____

5. Which technological outcome in the photograph is there for safety ?
   _____

6. List the natural features that have been made into a technological outcome ? _____
   _____

# How do technological outcomes expand human possibilities ?








This is a visual timeline of telephones. It shows how telephones have changed over time.

1. Identify ways the telephones have changed over time.

**Changes**

2. Write a paragraph that explains some of the changes you have identified in more detail. Write in full sentences.

**telephone - terewhōno**

**tāngata - people / human being**

# How do technological outcomes expand human possibilities ?

What is transportation ?

Imagine there was no kind of transportation yet invented. The only way you can get from one place to another is by walking. Give examples of three effects this would have on your life. Write in full sentences.

1. _____

_____

_____

2. _____

_____

_____

3. _____

_____

_____

Now give examples of two effects it would have on your local town.

1. _____

_____

_____

2. _____

_____

_____

Why do you think people created shoes ?

_____

_____

_____

This is an ancient shoe. What do you think people made shoes from in ancient times and why ?

**hū- shoe**

_____

_____

_____

_____

_____

_____

**Assessment: Rotation 3**
Characteristics of Technological Outcomes.

Level 2
You can describe some ways technology can expand opportunities for people. ☐

Level3
You can describe a range of ways technology can expand opportunities for people. ☐

**Task:**

Answer the following questions, **in a full sentence.**

***A** sentence starts with a capital letter and ends with a full stop.*

1. Explain what natural outcomes are:

_____

_____

_____

_____

2. What are technological outcomes ? _____

_____

_____

_____

_____

3. Why is the 'made' world is important to humans [people] ?

_____

_____

_____

_____

_____

_____

_____

**Assessment: Rotation 1& 2**
Characteristics of Technological Outcomes.

Level 2
You can describe some differences between technological outcomes and natural outcomes. ☐

Level 3
You can describe a range of differences between technological and natural outcomes. ☐

**Task:**

Look at each technological outcome. Decide whether it is made from natural or man made materials, and write natural or man made underneath each one.













**Task:** Below are four Maori technological outcomes from the past and present. Each one is made from a different natural material. Label the product and the material you think it is made from.

wood [rākau] Patu [Club] pendant [heitiki] Kete [Basket] whale bone [parāoa]

shell [paua] greenstone [pounamu] flax [harakeke] Nguru [whistle - flute]

Why did early Maori use natural materials ? _____

_____

_____

_____

# Identifying an issue [take]

**issue - take**

An issue is one smaller part of the bigger context, which we explore in more detail.

In Year 7 Product Design and Making the **issue** is:

**'The Made World'**

**Task:** Brainstorm all the technological outcomes you have used today, from the moment you woke up to now and write down next to each one what type of material /s each one is made from.

**world- autūroa**

# A need or opportunity ?

From the issue a **need** for a new product maybe identified or **an opportunity** to improve upon an existing product maybe identified.

In **Product Design and Making** we have the opportunity to:

_____

_____

_____

_____

**need - hiahia**

**Exploring the opportunity !**

**Task:**
Brainstorm the opportunity using the sub-headings given by your teacher.

**opportunity - kōwhiringa**

# Writing a conceptual statement

A conceptual statement is a sentence that explains what you are going to design and make, and why.

**explanation - whakamārama**

## Key Words

What ? [will you be designing and making]

Who ? [the person/s it will be for]

Why ? [what they will use it for]

Where ? [the environment it will be used in]

When ? [they will use it]

**what; he aha**

**who; wai**

**why; he ahaai**

**where; whea**

**when; kia**

**Task** for rotation 1 and 2:
Below write down the conceptual statement you have been given by your teacher for this project.

**Individual Assessment Task** for rotation 3:
You must personalise the conceptual statement given to you by your teacher, to include the 5 W's.

**Assessment: Rotation 3.**
Brief Development.

**Level 2**
You understand what is to be made. ☐

**Level 3**
You understand what is to be made and why, and can write a personalised conceptual statement. ☐

# **Research** [rapunga]

Research can happen at any stage in a technology project.

We do research to help us find things out that we do not know.

There are many different ways you can do research. You will learn different ways over your three terms of Technology.

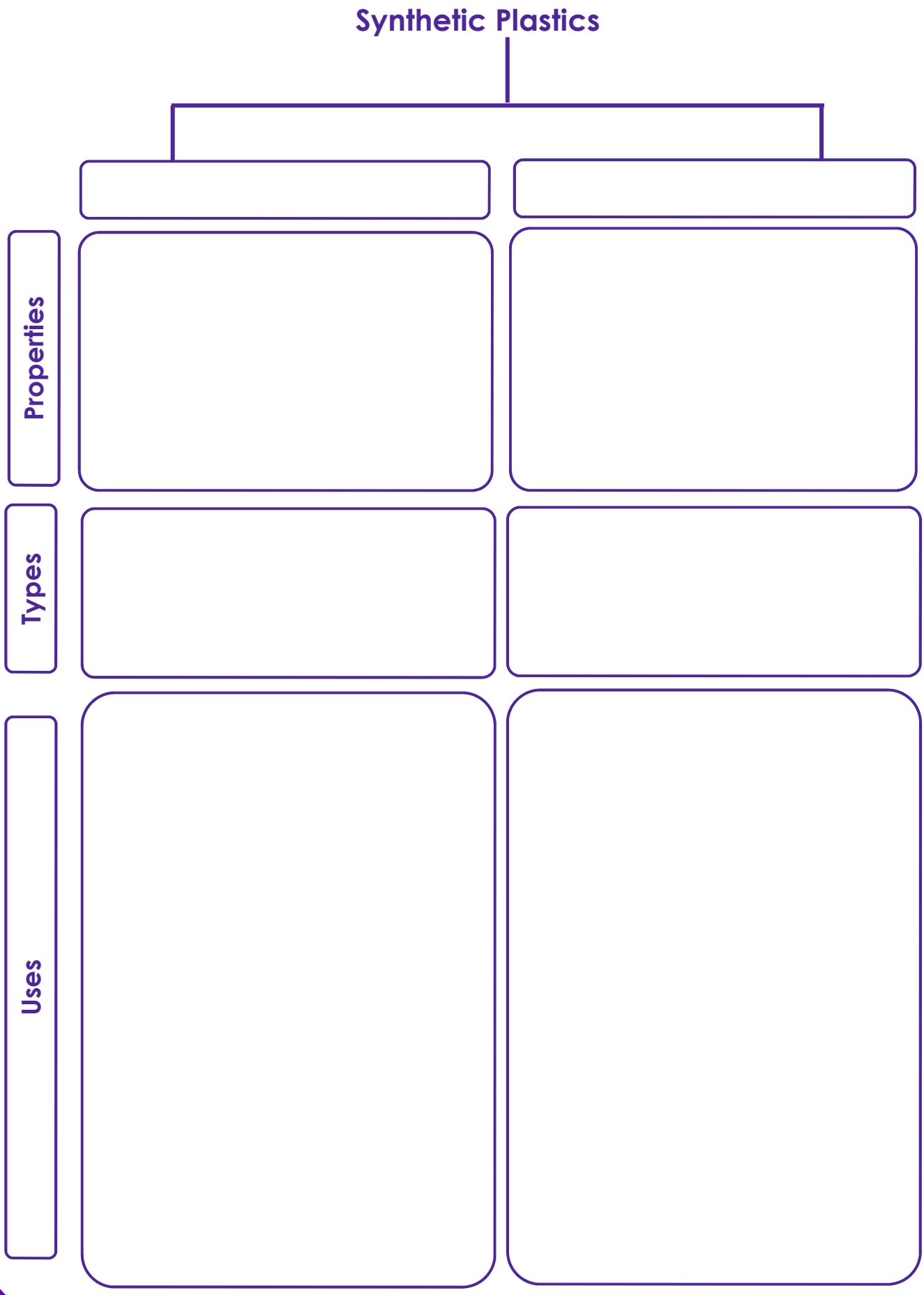

**Where does the word 'plastic' come from ?**

**Name the three groups plastics can be sorted into.**

**Plastics**

**plastic - kirihou**

Synthetic plastics can be subdivided into two groups.



# Researching materials

**Task:** Examine the different plastic samples your teacher has given you and complete the chart to record your findings.

| Plastic Sample | Type | Flexibility | Toughness | Float or sink | Strength |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| | | | | | |
| | | | | | |

to analyse - tātari

**research - rapunga**

| materials | papanga |
|---|---|
| wood | rākau |
| metal | mētara |
| plastic | kirihou |

1. What are composite plastics ?

2. What is the name of the composite plastic made from polyester resin and glass fibres ?

3. What type of products can this type of plastic be used to make ?

4. What is Carbon Fibre Reinforced Polyester made from ?

5. What type of products can that type of plastic be used to make ?

6. Some plastics are ‘Elastomers’ . Explain what this means:

7. What type of plastic is ‘ Expanded Polystyrene’ ?

8. What can Expanded Polystyrene be used for ?

**fact finding - ārohi**

# Exploring Plastics

# Attributes

Attributes are something a technological outcome must have / could have or do to be successful for its intended purpose.

**EXAMPLE**

**A T-Shirt *must*:**

be washable
have a neck hole
come in different sizes
have two sleeves
be suitable for ironing
have a care label
withstand wear and tear
be stitched together

**A T-Shirt *could*:**

have a design applied
be available in different colours

# Learning about attributes

Picture 1

Picture 2

Picture 3

**Task:**

1. Look carefully at the three pictures above.
2. What is the technological outcome in Picture 1 called? _____
3. In picture two what attribute has been removed ? _____
4. Do you think the technological outcome in Picture 2 would still work ? Yes No [Circle your answer]

pāta = kettle, container, pot

5. Explain why you think that. _____
_____
_____
_____

6. In Picture 3 another attribute has been removed. What is it ? _____
_____

7. List all the attributes you think the technological outcome in Picture 1 has. _____
_____
_____

Picture 1

Picture 2

Picture 3

**Task:**

1. Look carefully at the technological outcomes in the pictures.

2. Which one do you think is the oldest ? _____

3. Explain why you think it is the oldest. _____
_____
_____

4. Which technological outcome do you think is the most modern ? ___

5. Explain why you think that one is the most modern. _____
_____
_____

6. Which attribute on all of these technological outcomes needs to have good ergonomics ? _____

7. Two attributes are removed from the technological outcome in Picture 3 as shown below.

Think of a new use for it. What could it be used for

_____

_____

_____

8. Which material is the technological outcome in picture 3 made from ?

_____

9. Which other material has also been used in the outcome in picture 2 ?

_____

10. Explain what you think the bird [manu] is for on this kettle ?

_____

_____

_____

_____

_____

11. Would chocolate be a good material to make a kettle from ? Yes / No
Give a reason to explain your answer. _____

_____

_____

_____

12. Why does this kettle have a clear panel down the side ?

_____

_____

_____

_____

13. Why do you think plastic is a good material for a kettle to be made in ?

_____

_____

_____

_____

14. When the water gets hot in a kettle, what happens to the material it is made from ? _____

simliar - ōrite : different- rerekē

# Similar and different attributes

**Task:** 1. Look at both pairs of shoes carefully in the pictures and describe their attributes.
2. Identify the attributes that are key to both products and explain why they are key.


**Product 1 Attributes**

Attributes key to both products.

**Product 2 Attributes**

**Assessment: Rotation 3**
Characteristics of Technological Outcomes.

**Level 2**
You can describe some attributes when looking at a technological outcome. ☐

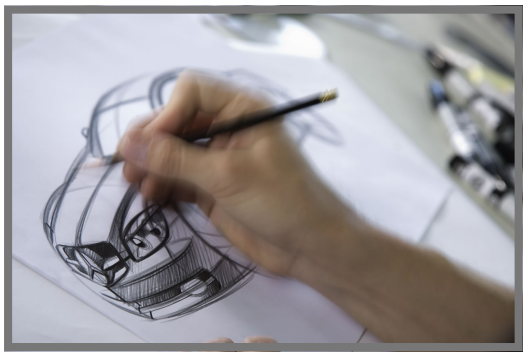
**Level 3**
You can identify and describe a range of key attributes for a technological outcome. ☐

# Designing Stage [Hoa]

Designing is a creative process.

You use your imagination to create ideas for new designs.

The quickest way to record your ideas is to sketch them and label the things you want to remember about them.



tuhi - **draw**

**Underline the odd word out:**

sketch draw photograph

**My design ideas.....**

**Task:**

huatau - **ideas**

**Attributes it will need:**

be creative, innovative - auaha

He aha te mea nui o te ao?
He tangata ! He tangata! He tangata!

What is the most important thing in the world?
It is people! It is people! It is people!

**Task:** _____

_____

**Attributes it will need:**

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

pene - **pen, pencil**

# My final designs

**Task:** [Rotation 1]
Draw your final design on this page and colour it well to show the colours it will actually be.

**Task:** [Rotation 2 and 3]
Complete the task above and then **LABEL** the attributes of your final design. Your final design should have ALL the attributes you identified earlier in the project.

**Assessment: Rotation 3**
Outcome Development and Evaluation.

**Level 2**
You can identify some attributes in your design by labelling them on your drawing. ☐

**Level 3**
You can identify all the attributes in your design by labelling them on your drawing. ☐

How much **time** do you need?

Kia hia te **roa** e hiahia ana koe?

# Planning Stage

Before we can make something we have to **plan out** how we will do it, and what we will need.

This reduces the risk of making mistakes and helps save time because we can get things organised for when we will need them.

**What units can time be measured in ?**

| | |
|---|---|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

It also helps us to identify anything we do not know how to do, and we can then find out how to do it before we get stuck.

**Unscramble the words:**

ntihk _____

npal _____

gornsiae _____

# Using a making plan

**To make something you need a plan to follow.**

This year you need to learn what making plans look like and how to follow them. Next year you will begin to write your own.

**Task:**

Put the stages of the plan your teacher has given you into order and stick it onto these planning pages.

hanga - to make, build, fashion, create

To arrange in order - whakaraupapa

to plan / think - whakaaro

**Change the words to the past tense:**

write _____

think _____

organise _____

plan _____

**Assessment: Rotation1,2 & 3**
Planning for Practice.

**Level 2**
You can follow written and verbal instructions with extra help. ☐

**Level 3**
You can follow written and verbal instructions with an expected level of help. ☐

***'Kahore he tārainga tahere I te ara.'***

***'You will not make a spear on the way to the hunt'***

***This proverb is about 'good preparation'.***

# Workshop code of practice

**Put each sentence in the right order to make the health and safety rules make sense.**

instructions gives carefully teacher to Always your listen the **you.**

---

**run.** walk workshop never You and should in always a

---

safety your getting to Wear glasses **hurt.** eyes from protect

---

**them.** fully You wear cover should shoes protect feet which your to

---

hair be All back long must tied **machinery.** prevent it caught in to getting

---

**them.** tools you Put finished away using have when

---

workshop everything place Put keep tidy. away correct the in to it's

---

mask. are When dust sanding a you wear

---

# Press drill code of practice

**drill - wiri**

## Draw the press drill.

## Label the following:

Chuck
Chuck key
Stop / start buttons
Gear box
Operating handle
Depth gauge
Pillar
Drilling table
Drill bit

## Complete the sentences below.

1. You must always wear _____ when using the machine to protect your _____.
2. You must always make sure the _____ is central in the _____ .
3. You must check you have removed the _____ from the chuck before you start the machine.
4. The start button is _____ in colour and the stop button is _____.
5. Your work must always be secured down in a _____ or by a _____.
6. You must not stand within 1 metre of anyone using a machine as this could cause an _____.
7. All _____ hair must be tied back so it cannot get _____ in the drill.
8. If your work gets loose and starts to spin _____ go and _____ the drill.
9. To reduce tearing or cracking you should put a scrap piece of _____ underneath you work when drilling.
10. Remove any loose _____ before using the machine.

**eyes clothing G - clamp long chuck green chuck key drill bit**

**hand vice let accident wood safety glasses stop red drill**

# Coping saw [kani anau] driving test

Now you have to pass your driving test with the coping saw.

**You must do the following to pass:**

1. Keep in your lane, on the **LEFT** hand side of the road.
2. Follow the route shown with the arrows.

**You must pass your driving test to be able to do practical work.**

Stick your driving test in this box.

FAIL ☐

PASS ☐

# Outcome Quality

Before a product is made we need to know how to decide how well made it is.
People want products that are of a high quality.

**Assessment: Rotation 1, 2 & 3.** Outcome Development and Evaluation.

**Level 2**
You need lots of help to make your technological outcome. ☐

**Level 3**
You made your technological outcome with an expected level of support. ☐

**Outcome Quality of**

| | |
|---|---|
| ☆☆☆☆ | **High Quality** ☐ |
| ☆☆☆ | **Good Quality** ☐ |
| ☆☆ | **Average Quality** ☐ |
| ☆ | **Low Quality** ☐ |

| Evidence | Reasonable Quality | Good Quality | Excellent Quality |
|---|---|---|---|
| POD opens and closes<br>Vacuum formed insert is inside POD<br>Pendant is cast and complete<br>Pendant sits inside the insert | ☐<br>☐<br>☐<br>☐ | | |
| POD opens and closes properly<br>The edges of the POD are mostly even<br>The edges of the POD are smooth<br>The vacuum formed insert fits correctly<br>The pendant has smooth edges<br>The pendant has some sheen from polishing | | ☐<br>☐<br>☐<br>☐<br>☐<br>☐ | |
| POD is accurately aligned all the way around the edge<br>The edges of the POD are very even<br>The edges of the POD are very smooth<br>The pendant has very smooth edges<br>The pendant has been finished to a polish | | | ☐<br>☐<br>☐<br>☐<br>☐ |

# Evaluating against the attributes

Attribute the product needed.

How well does your finished product include the attribute ?

# Evaluating my practice

**evaluate - whahamātau**

You need to review your own technological practice to identify ways you can make improvements in your next Technology rotation.

How wisely did you use the time available to you ?

_____

_____

If you could improve three things about your product/s what would they be ?

1. _____

_____

2. _____

_____

3. _____

_____

Did you work safely at all times ?

_____

What have you learned about the 'quality' of a product ?

_____

_____

_____

_____

When you come across a problem during practical work, what should you do, to keep making progress ?

_____

_____

_____

Did you take responsibility for your workbook and complete it all ?

_____

_____

How could you complete your next workbook better than this one ?

_____

_____

_____

**E raka te mauī, e raka te katau**

**A community can use all the skills of its people.**

Technological Knowledge

2 3

%

# Ka Pai!

## Well done on completing your workbook.