STUDENTS ON TRACK

SUPERCARS CHAMPIONSHIP Repco

PRIMARY WORKBOOK

INFORMATION FOR SCHOOLS AND TEACHERS

A visit to a round of the Repco Supercars Championship provides fantastic opportunities for students to engage with and get excited about STEM education. In an environment where they can see, hear and smell STEM in action, children can make meaningful connections between the Australian Curriculum and the action on track. This booklet has been designed to be completed by students either independently or collaboratively and can be utilised both on the day or back in the classroom.

Alignment with the Australian Curriculum Year 3 – 6	
Curriculum Area: Science	
Physical sciences	Forces can be exerted by one object on another through direct contact or from a distance (ACSSU076)
Science inquiry skills	Communicate ideas, explanations and processes using scientific representations in a variety of ways, including multi-modal texts (ACSIS093)
Curriculum Area: Design Technologies	
Knowledge and understanding	Investigate how forces and the properties of materials affect the behaviour of a product or system (ACTDEK011)
Processes and production skills	Generate, develop and communicate design ideas and processes for audiences using appropriate technical terms and graphical representation techniques (ACTDEP025)
Curriculum Area: Humanities and Social Sciences	
Geography	The representation of Australia as states and territories and as Countries/Places of Aboriginal and Torres Strait Islander Peoples; and major places in Australia, both natural and human (ACHASSK066)
Curriculum Area: Mathematics	
Number and algebra	Solve problems involving multiplication of large numbers by one- or two-digit numbers using efficient mental, written strategies and appropriate digital technologies (ACMNA100)
Measurement and geometry	Convert between common metric units of length, mass and capacity (ACMMG136) Use 'am' and 'pm' notation and solve simple time problems (ACMMG086) Compare 12- and 24-hour time systems and convert between them (ACMMG110) Use simple scales, legends and directions to interpret information contained in basic maps (ACMMG090) Use a grid reference system to describe locations. Describe routes using landmarks and directional language (ACMMG113)
General Capabilities: • Literacy • Numeracy • Critical and creative thinking • Personal and social capability	Cross Curriculum Priorities: • Sustainability

Source: Australian Curriculum, Assessment and Reporting Authority (ACARA), www.australiancurriculum.edu.au

1 Complete the force diagram by adding the correct labels to the force arrows.

Gravity
_____

Push
_____

Friction
_____
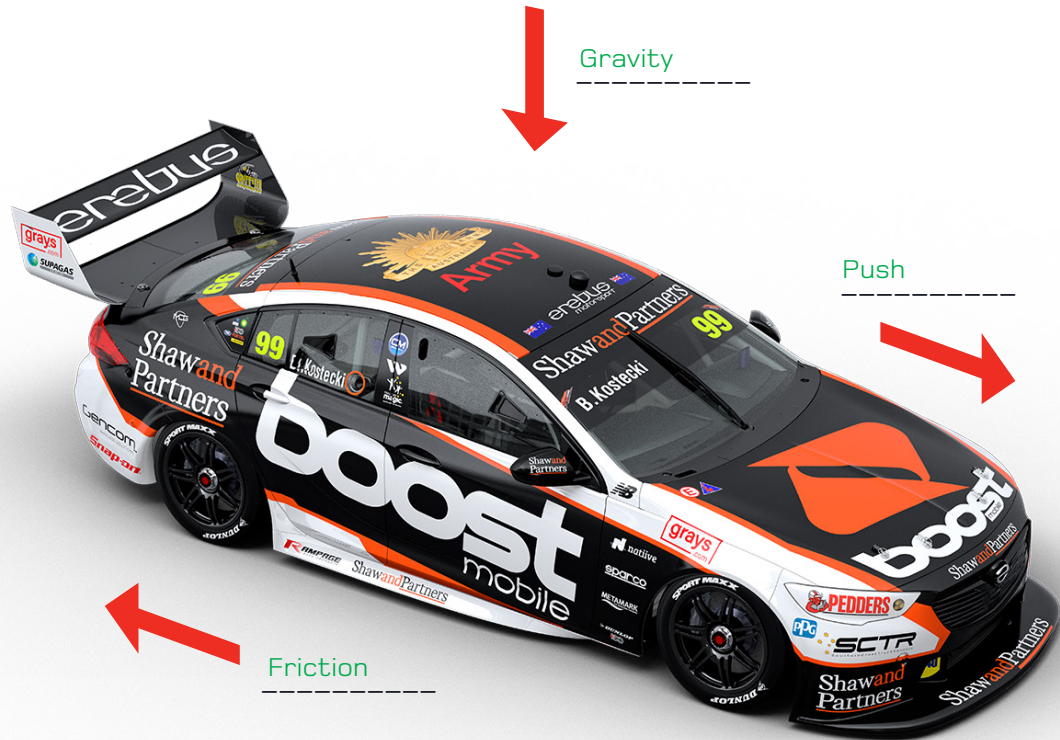
FRICTION   **GRAVITY**   **PUSH**

2 Make a list of the design features of a Supercar that make it faster than an ordinary car.

• Streamline shape
• Larger more powerful engine
• Smooth racing tyres
• Spoiler/splitter to control air flow

3 The fuel tank of a Supercar has a capacity of 102 litres. How many litres would be used to fill the tank 3 times?

102 x 3 = 306L

4 What is the total length of the race circuit you are at today?

Answers will vary

In kilometres _____

In metres _____

5 If a Supercar has completed 15 laps of the race and the circuit is 3km long, how many kilometres have been driven?

15 x 3 = 45km

6 A Supercar team uses approximately 16 tyres during each round. How many tyres would they need to get through all 10 rounds?

16 x 10 = 160 tyres

7 A Supercar weighs a minimum of 1,410kg. 3 Supercars can be loaded onto the transporter truck at a time. What would the total weight of the 3 cars be?

1,410 x 3 = 4,230kg

8a If a Supercars race starts at 11:30am and finishes 3 hours later, what time does the race finish?

2:30pm

8b Convert that time to 24-hour time.

1430

SUPERCARS SCAVENGER HUNT

Try and spot these items while you're at the track. Tick them off the checklist as you go.

Main Entry Gate		Grandstand	
Tow Truck		Safety Car	
TV Camera		Start Grid	
Pit Lane		Big Screen	
Helicopter		Transporter Truck	
Supercars Driver		Race Track Official	

Race Flags are used in motorsports to communicate important messages to drivers. Find out what each of these flags mean and record in the table below.

Flag	Meaning
	Danger on the track – drivers reduce speed, no overtaking allowed.
	Signals the start of race/safe racing conditions.
	Signals the race or practice session has been stopped or cancelled.
	Signals the end of the race or practice session.
	Driver must stop the race.

Design your own racetrack! A Supercars track is usually around 3km in length. Use the grid to help you get the distance right; one square on the map is equal to 100 metres in real life. Make sure you include features such as pit lanes, start/finish line and grandstands.
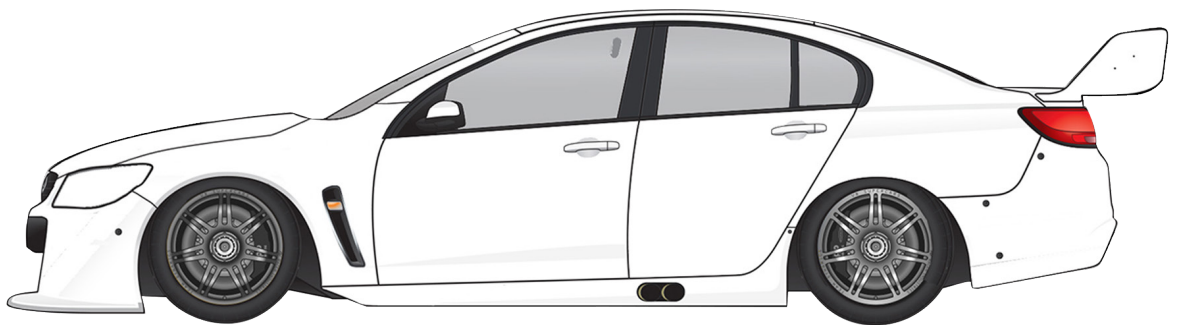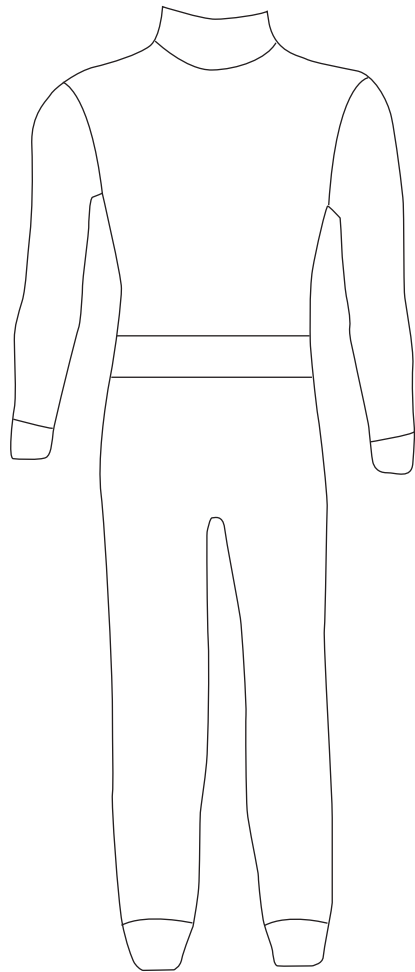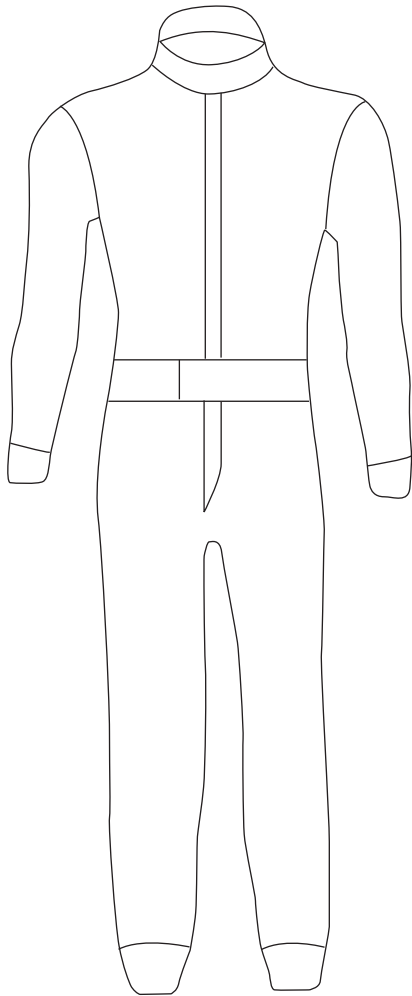
Answers will vary

	1	2	3	4	5	6	7	8
A								
B								
C								
D								
E								
F								
G								
H								
I								
J								

Write the grid references for at least 4 of your track features. For example, B3 = grandstand.

Imagine you are starting your own race team!
Come up with a design for your car and race suit.
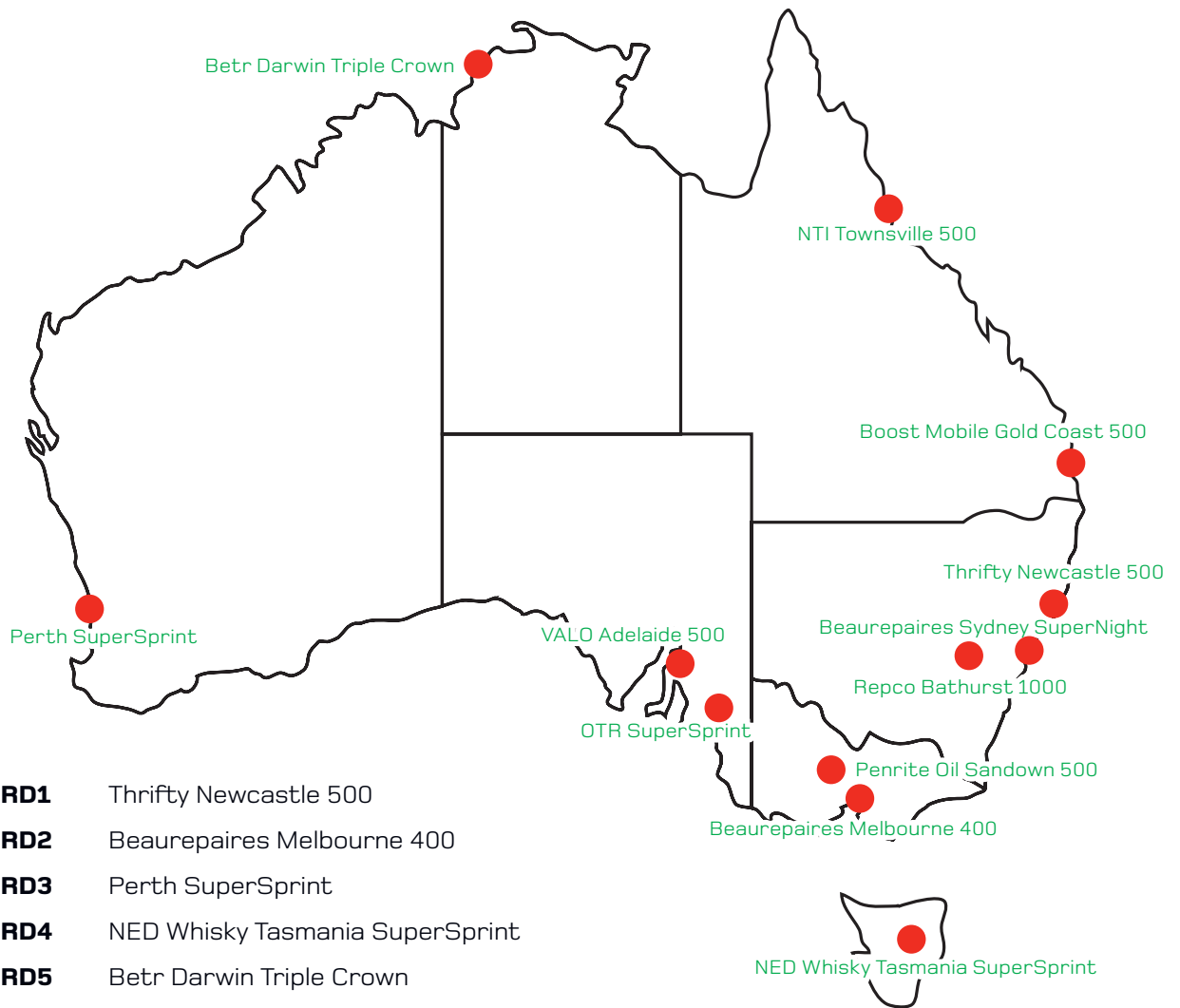
Answers will vary

- Plot the event on the right spot on the map.

- Place a star at the location of the track you are visiting today.

- Calculate these distances:

Darwin to Townsville   2,500km [approximately]
                              _____

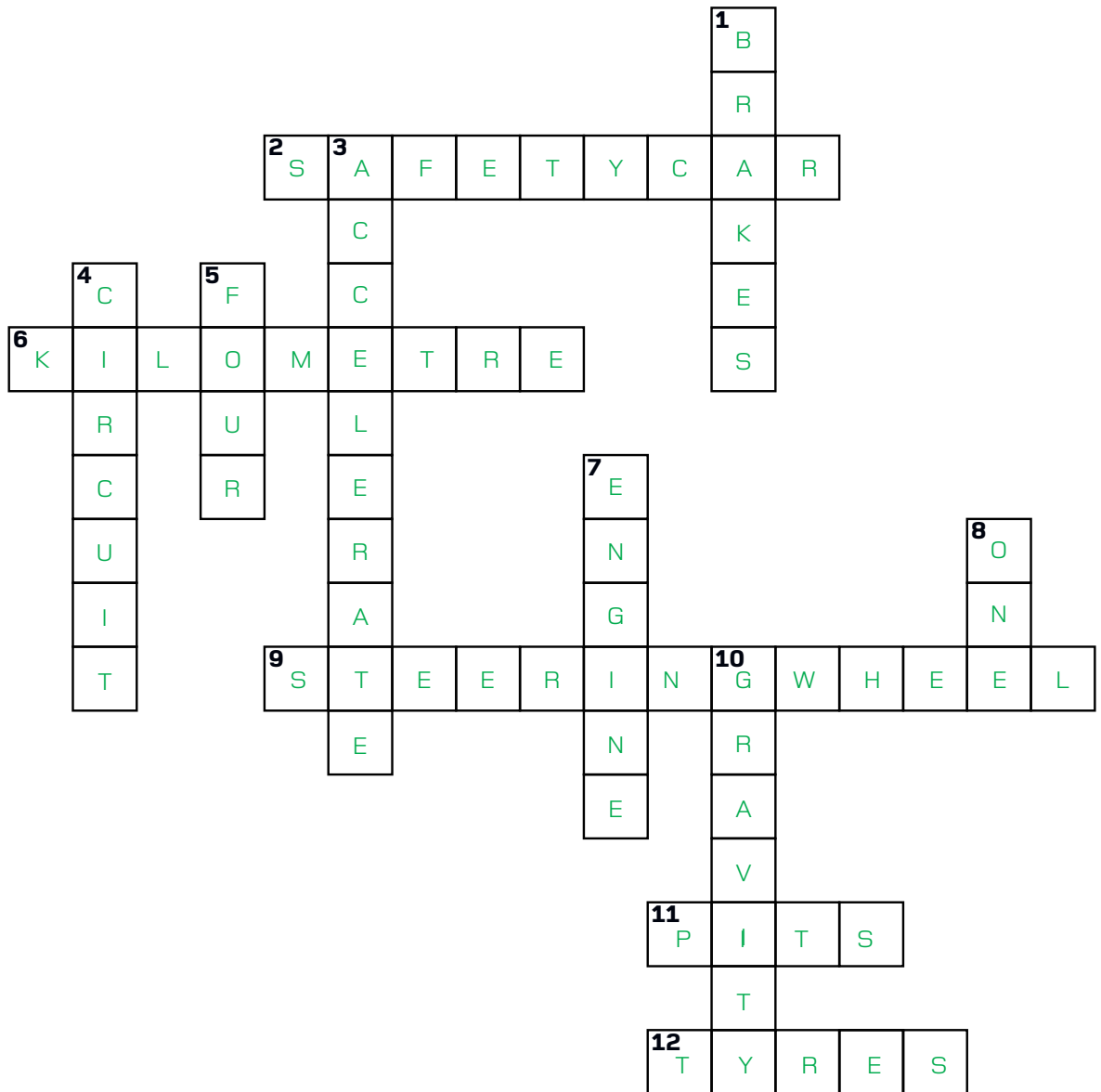Perth to Gold Coast   4,300km [approximately]
                              _____

Tasmania to Sydney   1,500km [approximately]
                              _____

Betr Darwin Triple Crown

NTI Townsville 500

Boost Mobile Gold Coast 500

Thrifty Newcastle 500

Beaurepaires Sydney SuperNight

Perth SuperSprint

VALO Adelaide 500

Repco Bathurst 1000

OTR SuperSprint

Penrite Oil Sandown 500

Beaurepaires Melbourne 400

NED Whisky Tasmania SuperSprint

RD1   Thrifty Newcastle 500

RD2   Beaurepaires Melbourne 400

RD3   Perth SuperSprint

RD4   NED Whisky Tasmania SuperSprint

RD5   Betr Darwin Triple Crown

RD6   NTI Townsville 500

RD7   Beaurepaires Sydney SuperNight

RD8   OTR SuperSprint

RD9   Penrite Oil Sandown 500

RD10   Repco Bathurst 1000

RD11   Boost Mobile Gold Coast 500

RD12   VALO Adelaide 500

SUPERCARS CROSSWORD PUZZLE

Grid solution:

- 1 Down: BRAKES
- 2 Across: SAFETY CAR
- 3 Down: ACCELERATE
- 4 Down: CIRCUIT
- 5 Down: FUR
- 6 Across: KILOMETRE
- 7 Down: ENGINE
- 8 Down: ON
- 9 Across: STEERING WHEEL
- 10 Down: GRAVITY
- 11 Across: PITS
- 12 Across: TYRES

Across

2. Comes onto the track after a crash

6. Equal to 1,000 metres

9. Turns the car

11. Where Supercars go for repairs

12. Help the Supercar grip the road

Down

1. Used to slow the Supercar down

3. Move faster

4. Another name for a race track

5. Number of wheels on a Supercar

7. Gives the Supercar its push force

8. Number of people in a Supercar when it is racing

10. The force that pulls objects towards Earth

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ON TRACK
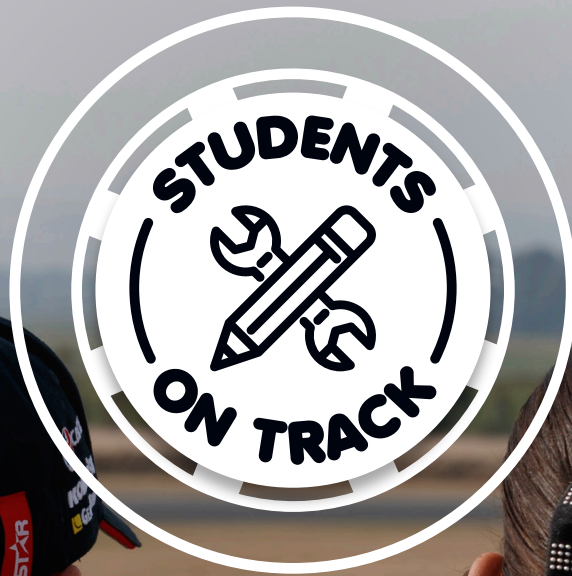
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