STUDENTS ON TRACK

SUPERCARS CHAMPIONSHIP Repco

PRIMARY ANSWER BOOK

INFORMATION FOR SCHOOLS AND TEACHERS

A visit to a round of the 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 - 4

Curriculum Area: Science	
Physical Sciences	Identify how forces can be exerted by one object on another and investigate the effect of frictional, gravitational and magnetic forces on the motion of objects (AC9S4U03)
Curriculum Area: Design and Technologies	
Engineering principles and systems; Materials and technologies specialisations	Describe how forces and the properties of materials affect function in a product or system (AC9TDE4K02)
Generating and Designing	Generate and communicate design ideas and decisions using appropriate attributions, technical terms and graphical representation techniques, including using digital tools (AC9TDE4P02)
Curriculum Area: Mathematics	
Number	Add and subtract two- and three-digit numbers using place value to partition, rearrange and regroup numbers to assist in calculations without a calculator (AC9M3N03) Recognise and extend the application of place value to tenths and hundredths and use the conventions of decimal notation to name and represent decimals (AC9M4N01) Explain and use the properties of odd and even numbers (AC9M4N02)
Measurement	Solve problems involving the duration of time including situations involving “am” and “pm” and conversions between units of time (AC9M4M03) Identify angles as measures of turn and compare angles with right angles in everyday situations (AC9M3M05)
Space	Interpret and create two-dimensional representations of familiar environments, locating key landmarks and objects relative to each other (AC9M3SP02)
Statistics	Acquire data for categorical and discrete numerical variables to address a question of interest or purpose, using digital tools; represent data using many-to-one pictographs, column graphs and other displays or visualisations; interpret and discuss the information that has been created (AC9M4ST01)

General Capabilities	Cross Curriculum Priorities
• Literacy • Numeracy • Critical and Creative Thinking • Personal and Social Capability	• Sustainability

Source: Australian Curriculum Version 9, https://v9.australiancurriculum.edu.au/

ESCAPE THE SUPERCARS GARAGE CHALLENGE!

Scenario:

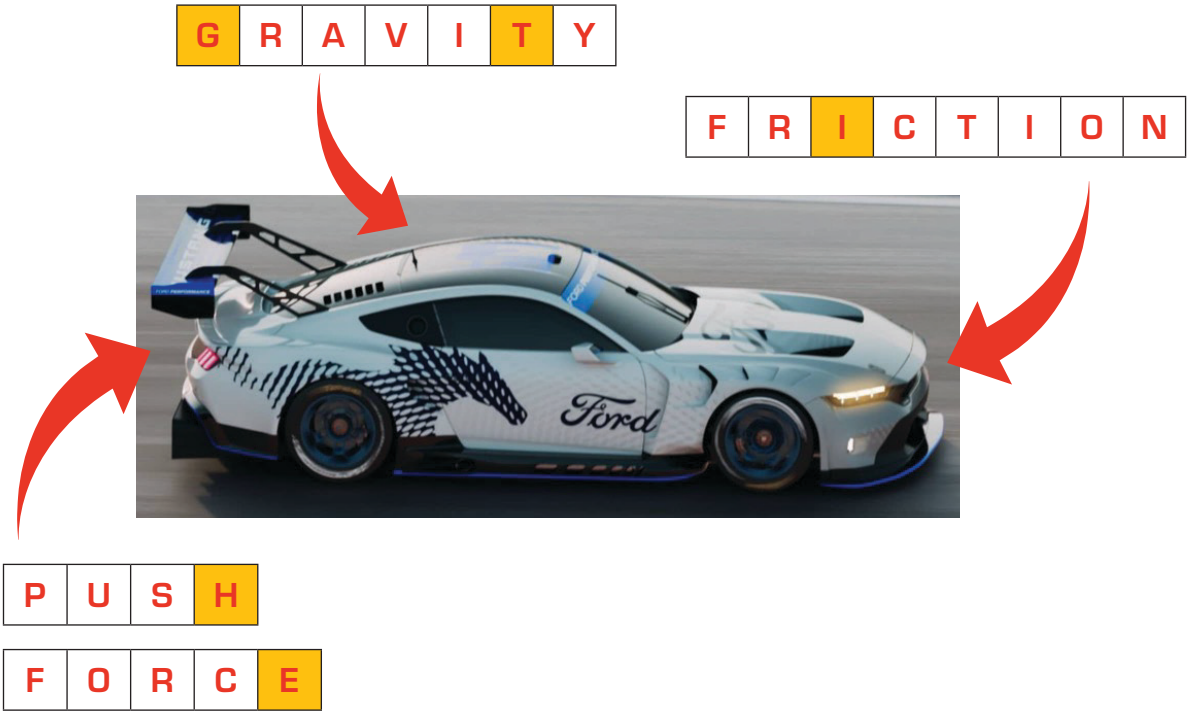
Oh no! You've been locked in a Supercars garage and need to escape. The door to get out is controlled by an eight-digit security keypad. To escape you must solve eight questions to reveal the secret security code and unlock the mechanism.

Rules:

- You can work independently, with a buddy, or in a small group.
- Think carefully to answer each question.
- Write your answer down on the recording sheet.
- Once you have all the numbers for the keypad, check it with your teacher to find out if you can escape the garage!

1 Fill in the boxes to correctly label this force diagram.

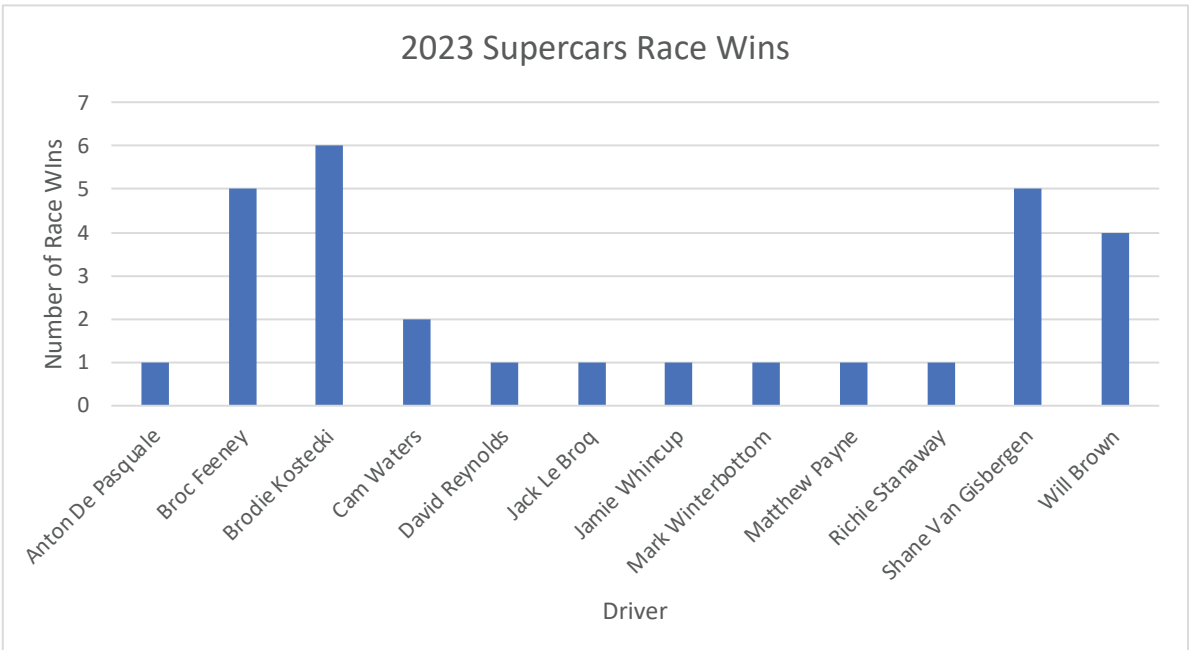
Rearrange the highlighted letters to spell out the first digit in the code.



2 This chart shows the number of race wins for drivers in the 2023 Supercars Championship.

The number of drivers who had 2 or more wins is the second digit in the code.

Broc Feeney, Brodie Kostecki, Cam Waters, Shane Van Gisbergen and Will Brown all had two or more wins, so the answer is 5.



This table shows the lap times for a Supercars car over six laps of a race.

Use the table to answer Questions 3 and 4.

Lap 1	Lap 2	Lap 3	Lap 4	Lap 5	Lap 6
52.03	51.57	51.93	52.55	52.16	51.98

3 Sort the lap times into order from fastest to slowest.

The lap number of the fastest lap is the third digit in the code.

Lap 2 was fastest = 2.

Lap 2	Lap 3	Lap 6	Lap 1	Lap 5	Lap 4
51.57	51.93	51.98	52.03	52.16	52.55

4 The number lap times that are **even numbers** is the fourth digit in the code.

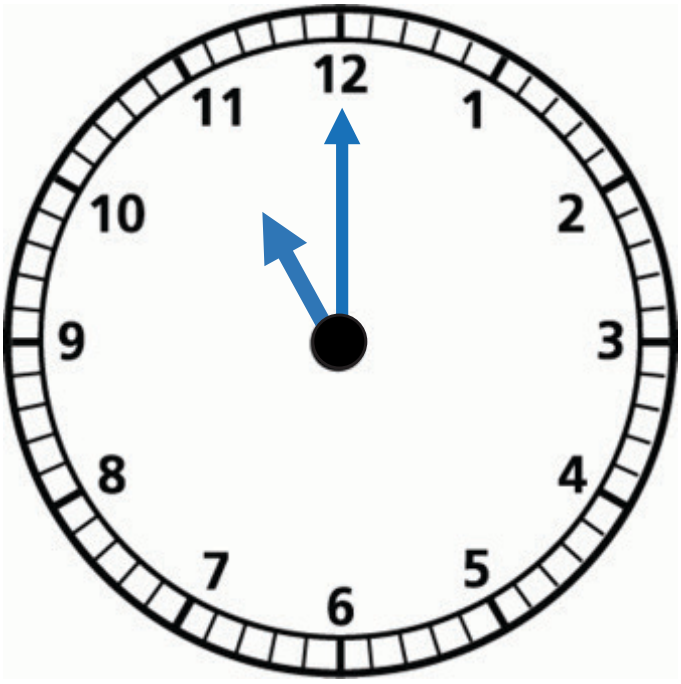
Lap 5 and 6 had even times = 2.

Lap 1	Lap 2	Lap 3	Lap 4	Lap 5	Lap 6
52.03	51.57	51.93	52.55	52.16	51.98

5 This clock shows the start time of a Supercars race. The race goes for 90 minutes.

The number on the clock that the minute hand would be pointing to at the end of the race is the fifth digit in the code.

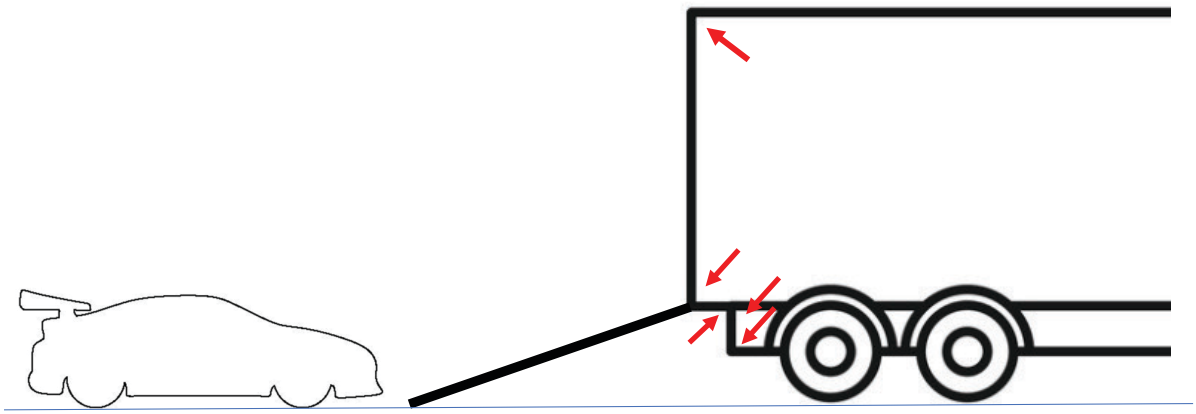
After 90 minutes the time would be 12:30 so the minute hand would be on the 6.



6 Study the diagram below.

The number of **Right Angles** is the sixth digit in the code.

There are 5 right angles.



7 If a Supercar has travelled 21 kilometres after the first 3 laps of a race. How long (in Kms) is the track?

The answer is the seventh digit in the code.

21 ÷ 3 = 7.

8 A Supercars car weighs 1340Kg with no driver and an empty fuel tank. If a driver adds 75kg and a full tank adds another 90kg, what is the new total weight of the car?

The digit in the tens place is the eigth digit in the code.

75 + 90 = 165. 1340 + 165 = 1505kg, the 0 is in the tens place.

ESCAPE THE SUPERCARS GARAGE RECORDING SHEET

1st Digit	2nd Digit	3rd Digit	4th Digit
8	5	2	2

5th Digit	6th Digit	7th Digit	8th Digit
6	5	7	0

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 meters in real life. Make sure you include features such as pit lanes, start/finish line and grandstands.

	N	M	L	K	J	I	H	G	F	E	D	C	B	A
1														
2														
3														
4														
5														
6														
7														
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25														

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

SUPERCARS SPOT THE DIFFERENCE!

There are 10 differences to find between the two photos.

SUPERCARS WORD SEARCH PUZZLE!

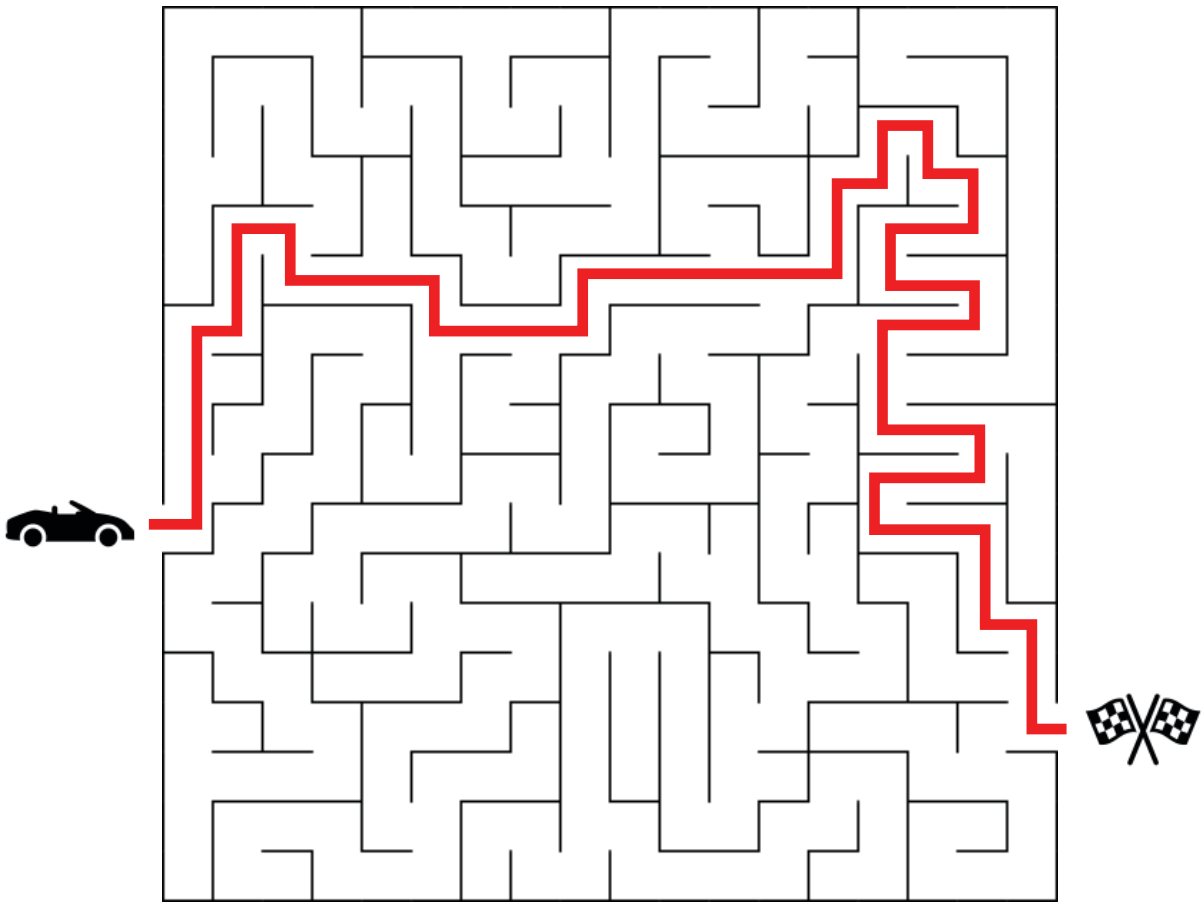
E	L	U	N	P	G	B	O	C	T	P	Z	S	K	W
C	N	J	X	A	I	A	M	T	Y	U	V	S	H	E
E	C	G	M	K	J	T	P	K	R	V	J	E	T	M
Z	R	S	I	S	C	R	L	D	E	Z	E	N	D	B
H	O	D	F	N	U	U	K	A	R	L	P	R	O	Q
B	T	B	U	Z	E	T	D	S	N	I	O	A	F	M
Z	A	F	E	H	S	I	N	I	F	E	V	H	H	S
L	T	M	L	G	P	G	R	I	D	Y	V	E	M	P
H	C	K	P	T	F	X	G	Q	O	C	L	U	R	E
H	E	L	M	E	T	R	T	A	P	H	I	H	V	E
H	P	U	K	Y	A	N	K	A	L	D	X	M	X	D
X	S	L	M	C	S	I	L	I	O	F	S	A	A	L
S	J	O	E	I	A	W	L	P	B	R	A	K	E	X
G	H	I	E	T	A	R	E	L	E	C	C	A	B	Z
E	L	X	A	B	Z	S	T	B	A	R	R	I	E	R

Accelerate
Brake
Finish
Grid
Lap
Race
Track

Axle
Driver
Flag
Harness
Pitlane
Spectator
Tyre

Barrier
Engine
Fuel
Helmet
Podium
Speed
Wheel

CAN YOU FIND YOUR WAY THROUGH THE MAZE TO THE FINISH LINE?



Fill in the missing letters to reveal the names of some top Supercars drivers

1 MATTHEW PAYNE

2 CAM WATERS

3 WILL BROWN

4 DAVID REYNOLDS

5 RICHIE STANAWAY

6 TIM SLADE

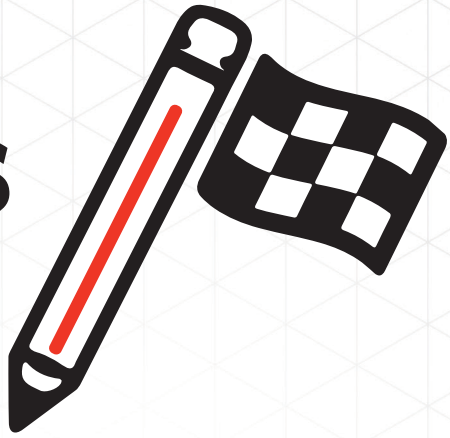
7 JAMES GOLDING

8 BROC FEENEY

9 CHAZ MOSTERT

10 JACK LE BROCQ

STUDENTS ON TRACK



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