Game Questions

Below is a list of theme-based questions and their respective answers that are listed within the Imagine-X Racing game. These questions have been designed to reflect the content taught in the lesson, to assist supporting the formative assessment of student learning within this theme.

The questions are used in the practical version of the main activity at the start of the virtual race to determine the placement of each car, and again during the pit stop, where they must correctly answer the questions correctly as fast as possible to continue with the race.

*The correct answer for each question is in **bold**.*

Primary Level Questions:

What racing car works best on hills and in deep mud?

Go-kart	Rally car	**Rally Raid (4x4)**

What energy does the engine produce?

Chemical	Nuclear	**Kinetic**

What is the Term for being aware of your surroundings?

Mirror Awareness	**Situational Awareness**	Driver Safety

Which of these factors refers to the vehicle weight?

Mass	Friction	Drag

What is the purpose of situational awareness in motorsport?

To make sure your car's sensors are working	To make sure you're using your mirrors correctly	**To be aware of and understand your surroundings and act upon any potential risks**

Which of these is a key benefit of working in a team? (TRICK QUESTION)

Inclusivity	**Better ideas**	**Respecting each other**

Which force works against aerodynamics and slows down a moving vehicle?

Gravity	Mass	**Drag**

How many levels are there to vehicle autonomy?

8	**5**	3

Why are Rally Raid cars built with heavy parts? (TRICK QUESTION)

For reliability on rough terrain	**For safety**	**To help absorb shock**

Bonus Questions (Hard)

What is the current level of vehicle automation for most cars?

Partial automation	Driver assistance	High automation

What is torque?

The force that causes the wheels to turn	**The force that keeps the car on the track**	The energy that the engine creates

What is the second stage of situational awareness?

Reacting to the information	Viewing the surroundings	**Processing the surroundings**

How many tyres are there on a normal racing car?

3	8	**4**

Who works in the pit stop?

Pit crew	The driver	Marshals

Which tyres work best in wet conditions?

Go-karting tyres	Drag racing tyres	**Rally tyres**

If you are the first car out onto a rally stage, are you at an advantage?

Yes	**No**

Which of the following is affected when the track is wet?

Drag	**Friction**	Mass

How will a car behave on a wet surface compared to a dry one?

More grip	**Less grip**	No change

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Secondary Level Questions:

How many tyres did Lewis Hamilton have when he crossed the 2020 British Grand Prix finish line?

1	4	**3**

What is the name of one of the most famous Rally Raid events?

Meteor Rally	**Dakar Rally**	Rodeo Rally

Which car has to deal with the roughest surfaces?

Formula 1	**Rally**	Go-kart

How many teams usually take part in Formula 1?

18	25	**20**

If a vehicles mass is high, which of the following is true?

It is harder to slow down	It is easier to slow down	Mass doesn't affect braking

How does Nathalie McGloin understand the performance of her car on the track:

Nathalie utilises the vibrations from the car and looks at the car's gauges	If another car passes her Nathalie knows performance is dropping	Nathalie knows that performance is ok because it was last time

Which of these features are usually implemented into a racing car to keep the driver safe? Which force works against aerodynamics and slows down a moving vehicle? (TRICK QUESTION)

The use of the correct tyres for the track conditions	**Specialised seatbelts**	**Safety cage and structure**

If your car design results in a large amount of drag, how does this affect the overall performance?

Slower on straights	Faster on straights	No Difference

Which of the following is the suspension system used for a go-kart?

Flosser and brassis	**Flex and chassis**	They don't need one because of their low centre of gravity

What do partially automated vehicles do?

Use data for cruise control	Drive without human interaction in certain areas	Use parking sensors and cameras

What animal weighs more than the average rally car?

Black Rhino	Sheep	Panda

Bonus Questions (Hard)

Why did the designer of the Tyrell P34 believe six tyres would be more beneficial than four?

It would better tackle the air resistance	It would increase the mass and thus be safer to drive	It would increase grip for wet weather conditions

What are iron-based alloys used for in vehicle design?

Helmet and seatbelts	Spoilers	**Crankshaft and camshafts**

Pit stop questions:

Who set the record for the quickest time taken to complete an F1 pit stop in 2019?

Mercedes Benz	Toyota	**Red Bull**

What was the quickest time taken to complete an F1 pit stop in 2019?

1.8 seconds	3.7 seconds	2.4 seconds

What was the average time taken to complete an F1 pit stop in 2019?

1.8 seconds	**3.7 seconds**	2.4 seconds

In which motorsport has refuelling mid-race been banned?

Drag racing	Go-karting	**Formula 1**

Who lifts up an F1 car during a pit stop?

Pit Crew	Data Analyst	Driver

If you have lots of downforce, your car will perform well at which part of the track?

Corners	Straights	Pit Stops

What is the role of the pit marshal?

Alert drivers to any issues on the track	Fill up the driver's water bottle and check that they're ok mid-race	**Ensure the safety of everyone and guide the traffic in the pit**

•What is the most common engine used in Rally racing?

1.6 litre, double-overhead camshaft (DOHC) reciprocating engine	**Turbocharged engine**	8-cylinder petrol engine

What was the difference in Pip Hammond's best time after modifying his car to meet the new weight rule implemented at the 2020 Porsche Championship?

7 seconds slower	1 second faster	**4 seconds slower**