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LONDON FILM MUSEUM

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**BOND IN MOTION**

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THE LARGEST OFFICIAL COLLECTION OF ORIGINAL JAMES BOND VEHICLES

*007*

FEATURING  
THE CARS OF  
**S P E C T R E**  
*007*

**EDUCATIONAL RESOURCE MATERIAL**

**KS3**

**MATHS & SCIENCE WORKSHEETS**

[www.londonfilmmuseum.com/education](http://www.londonfilmmuseum.com/education)

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## MATHS AND SCIENCE WORKSHEET

Have you ever wondered how maths and science are helpful in life outside of the classroom? Look no further than the vehicles in the Bond in Motion Exhibition!

Speed of travel, resistance in air and water, properties of materials and acceleration, and many more topics besides, are all things you will come across in your science and maths lessons. The engineers that build cars would not be able to do so without knowing a lot about all of those subjects.

If you completed our discovery worksheet you may remember that Q is currently very busy preparing for Bond's next mission. In order to be ready for this he needs to collect some information on past vehicles.

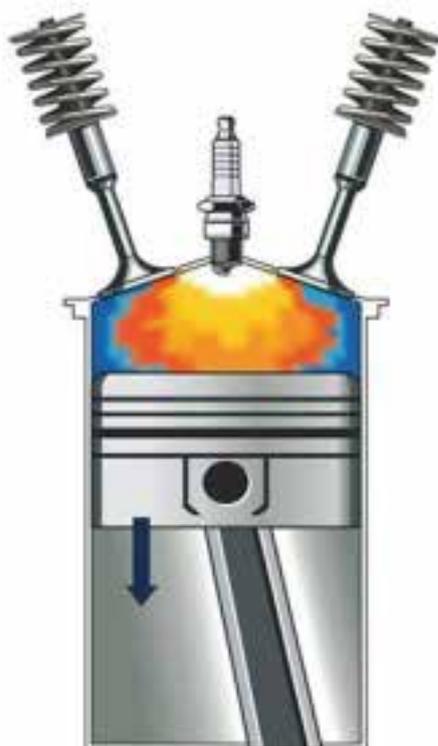
See if you can answer the questions below so we can pass the information on to Q.

Before we start lets think a little bit about how a car's engine works...

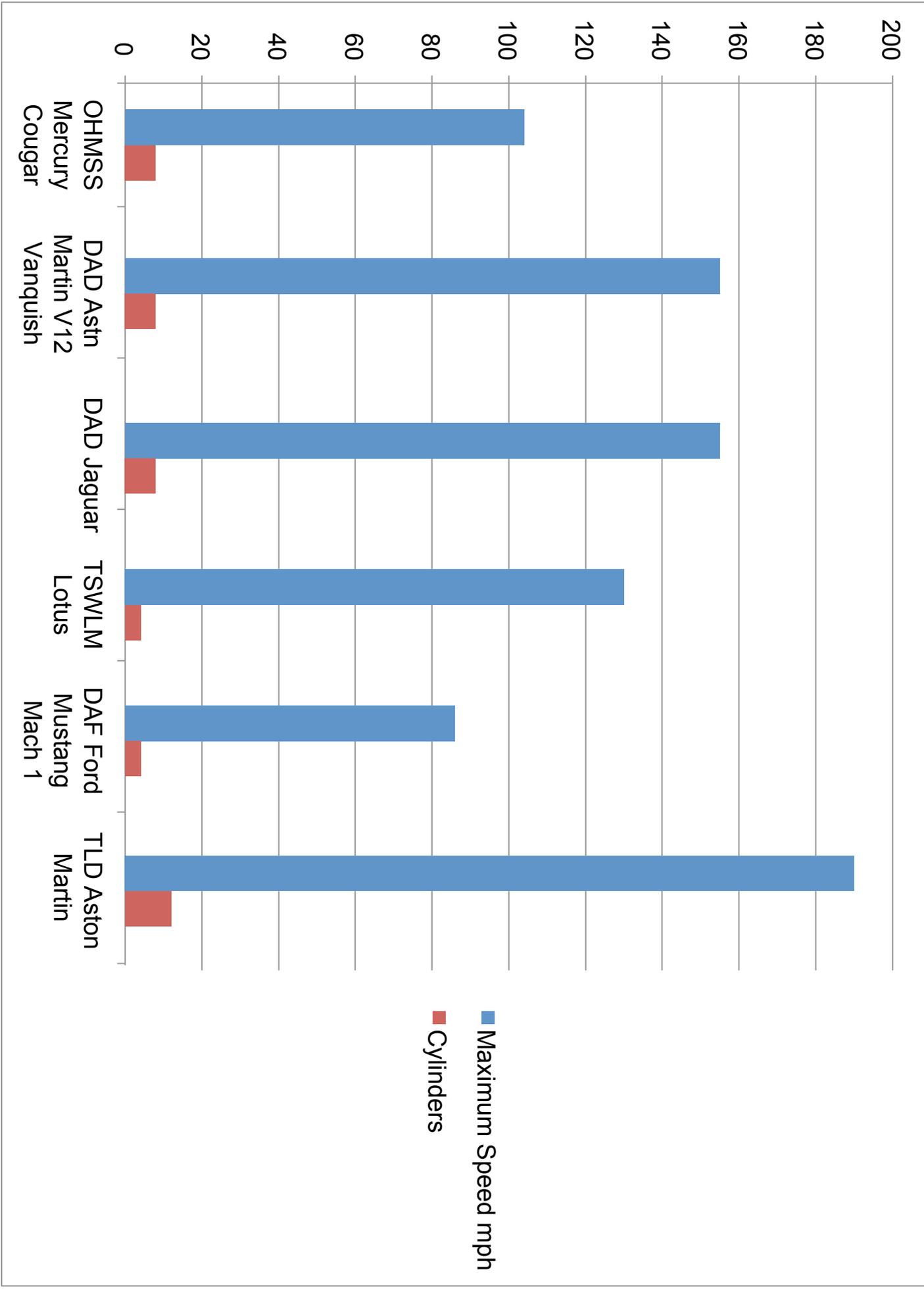
Without cylinders a car would not work!

A cylinder is a central part of the car's engine. It contains tightly fitting pistons which move up and down. These are attached to a turning axle called the crankshaft, which powers the gearbox, which in turn drives the wheels.

The cylinders are also the chambers in which the fuel is burned into power.



Now look at the graph on the next page.





Use the graph to answer the following questions:

1. Which car is the fastest?

2. Which car has the most cylinders?

3. Which three cars have the fewest cylinders?

4. Of the three cars with the fewest cylinders, which is the fastest?

5. What is the relationship between the number of cylinders and the speed of the car?

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The power of a car is measured by the number of BRAKE HORSEPOWER it's engine is.

This is referred to as 'bhp.'

6. Can you guess why a vehicle's power is measured by a unit called 'horsepower?' *Think about forms of transport used in the past!*

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The more brake horsepower an engine has, the more powerful the vehicle is. It is assessed by measuring the force that would be needed to brake the engine.

Q needs to find out the bhp of the vehicles included in the graph on the previous page.

7. Go and find the vehicles and fill in a new bar for each one that show the bhp. Don't forget to update the key!

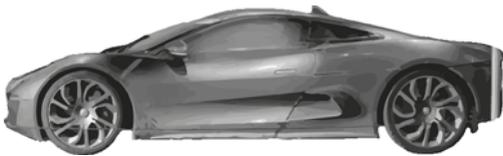


Now we need to help Q work out what shape is best for Bond's next vehicle!

Go and have a look at the vehicles in the Cars of Spectre section.

There are four vehicles here and they are all very different shapes.

There is a Land Rover, a Rolls Royce, an Aston Martin and a Jaguar. Label below which one is which.



Now think about their shape.

7. Which two are the best shapes to achieve high speeds?

8. Why are they the best?

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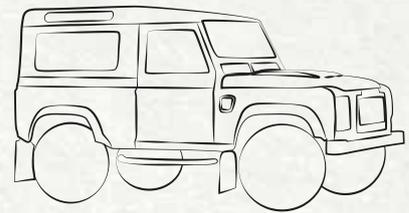
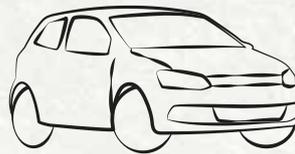
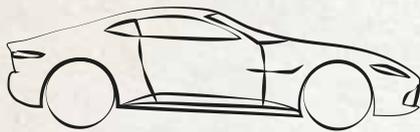


9. Using the information you have discovered fill in your recommended car spec for Q. Fill in the blanks and circle your choices!  
When filling in the blanks make sure you look back to the graph to see which number of cylinders and brake horsepower meant the car went fastest!

Dear Q,

I have now completed the research you needed.

I can now recommend a car that is this shape:  
(circle your preferred option)



It should have ..... Cylinders.

It should have ..... Brake horsepower

This will help the car go very fast so Bond can have the best chance of completing his mission.

Kind regards,

.....

From .....