

Task Sheet

Journey of a car

Use your knowledge and understanding of forces to explain the journey of this car.



Task:

Draw force diagrams to show the car when it is:

- still;
- accelerating;
- travelling at steady speed;
- slowing down.

Key words:

accelerate, balanced, decelerate, drag, friction, pull, push, reaction, steady speed, unbalanced, weight

Level ladder:

What is your target level? Use the level ladder to help you reach it:

| Challenge | When the car is still, accelerating, at steady speed and slowing down, you might have: |
|-----------|---|
| Easy | <ul style="list-style-type: none">• Drawn force diagrams to show direction of the forces.• Labelled force arrows using key words.• Identified pairs of forces as balanced or unbalanced, or drawn arrows clearly to show this.• Estimated the size of the forces. |
| Medium | <ul style="list-style-type: none">• Drawn force diagrams to show the size and direction of the forces.• Labelled force arrows using key words.• Identified pairs of forces as balanced or unbalanced, or drawn arrows clearly to show this.• Explained why forces are balanced or unbalanced.• Estimated the size of the forces, using the correct units. |
| Hard | <ul style="list-style-type: none">• Drawn force diagrams to show the size and direction of the forces.• Labelled force arrows using key words.• Identified pairs of forces as balanced or unbalanced, or drawn arrows clearly to show this.• Explained in detail why forces are balanced or unbalanced.• Estimated the size of the forces, using the correct units.• Explained why "reaction force" must exist.• Explained why friction increases as speed increases using the Big Idea of Particles. |