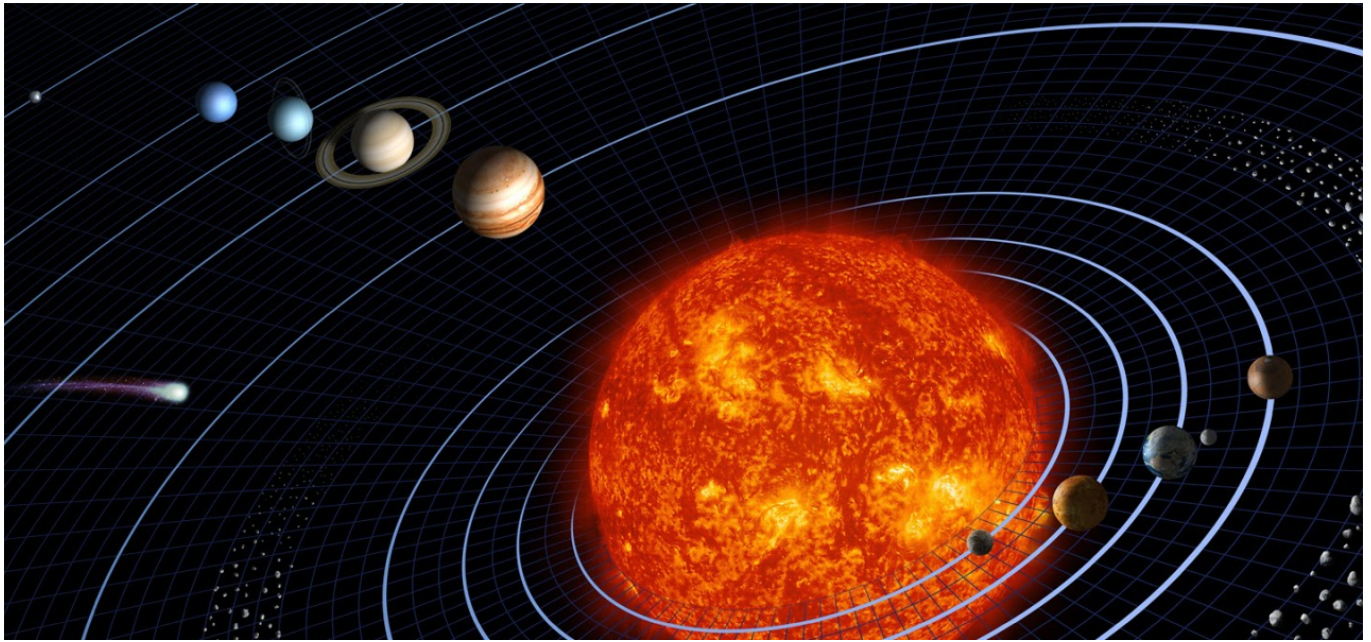


# Discovery

## Forces and Functions



### Years 3 & 4

Your students will be engaged in the practical application of physics and programming. They will learn how forces can be exerted on one object by another as they design and build a balloon-powered car. Your students will learn how to create simple programs using Scratch. They will create their own computer application and provide feedback to their classmates about their creations.

### Rationale

Practical and engaging explorations of physics, engineering and coding will motivate students to pursue these skills as they get older.

### Essential questions

- What are 'contact forces' and what are 'action-at-a-distance' forces?
- How do you design and conduct an experiment?
- How do you make computer programs using Scratch?

### Glossary

animation, awe, axle, computer program, discovery, elasticity, electrical force, engineer, experiment, fear, force, friction, gravitational force, hyperlink, hypothesis, indifference, magnetic force, results, spring force, superhero, tension, tutorial, wind, windmill

### Rich assessment task

Students will experiment with materials and design as they build a balloon-powered rocket. They will also create a program of their choice using Scratch.

### Future action

Your students will consider physics in their world; as they travel to and from school and as they play with their friends. They will appreciate the complexity and creativity of computer programs that they use every day. Your students will be able to discuss new scientific findings by referring to their knowledge of the scientific method. They will continue to develop their science, engineering and programming skills by establishing interest-based clubs at school.