

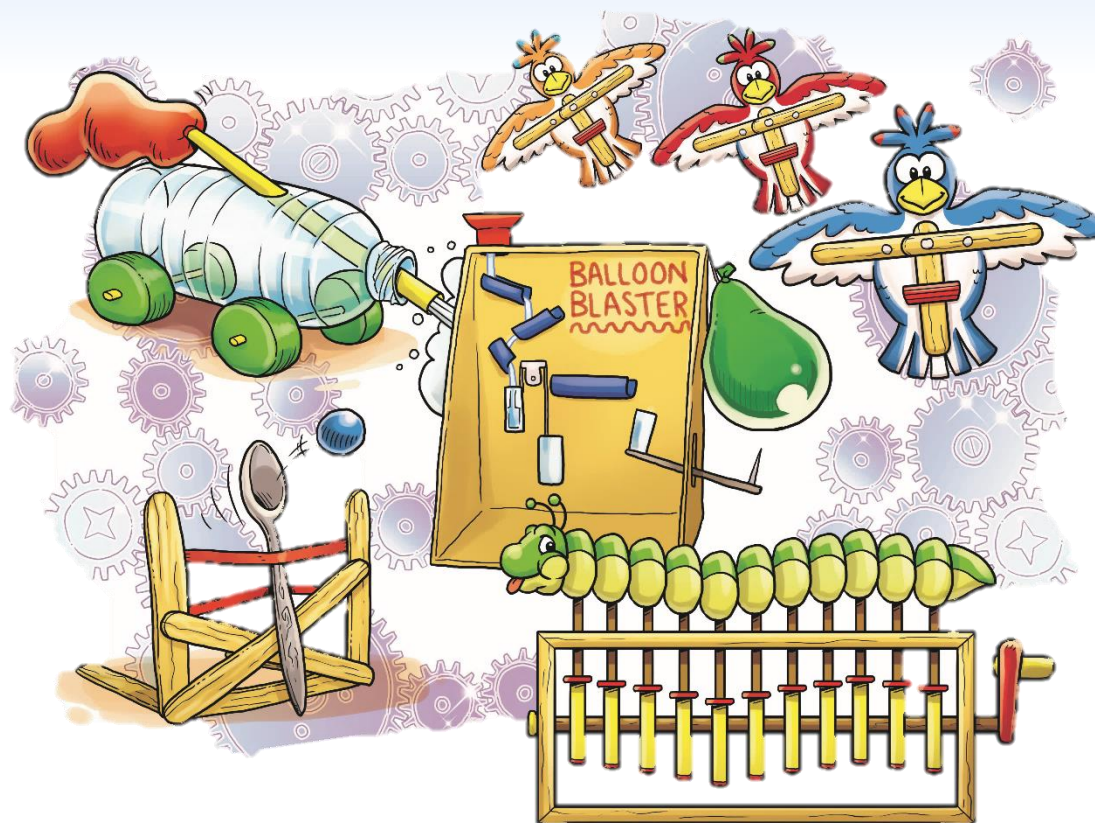


St. Peter's
Catholic Primary School

Balloon Blaster (and other mechanisms challenge)

Upper Key Stage 2, Year A, Summer Term 2

6 weeks



We put Jesus at the heart of everything that we do.

special kind unique inventive
generous awesome gentleness
purity helpful good positive
expressive enjoyable caring
adventurous bouncy zingy
fun truth colourful superb
confident polite compassion
friendly enthusiastic marvellous
comforting nice remarkable
happy magnificent great
meaningful forgiveness
exceptional joy wonderful
interesting creative hopeful
incredible spectacular
original brilliant peace
lovely service outstanding
dynamic amazing
dignity fabulous impressive
beautiful sacrifice
glorious fantastic tolerance
exciting terrific delicious
integrity cool considerate
phenomenal laughing funny
sharing humility loving
energetic smiling captivating
justice encouraging mercy
gracious faithful important
supporting delightful thankful
hard-working tremendous



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The aims of our curriculum:

- We aim to be like Jesus the teacher, where all children learn to be good, inquisitive learners, capable of making our world a better place. Like Jesus our shepherd, no child will be left behind.
- We want our children to know more and remember more
- We aim to provide our children with a broad curriculum, rich with cultural capital.
- We aim to teach what is required from the National Curriculum as a minimum.
- We aim to create a curriculum that is teachable, clear and practical where possible.
- We want all of our children to progress so that they can tell us about their own progression in learning.
- We want our children to be able to tell us why they are learning what they are learning.

"If any of you lacks wisdom, let him ask God, who gives generously to all without reproach, and it will be given him."

James 1:5

Our Curriculum Drivers:

Catholic Social Teaching

Caritas in Action, KS2

Rights and Responsibilities

See plan below

Our Resilience

CQ 'Try New Things'

Use a saw!

See plan below

Our Community

Arrange an Apprentice Style pitch with business representatives from within our school community, to seek funding to produce our designs.

Sustainability

Create impact statements about the affect that our design might have on the Earth

Diversity and inclusion

We will learn about Ramadan and hold a special celebration for Eid!

Balloon Blaster and other mechanisms challenges:

As Designers, we will:

Explore the use of axles and wheels in vehicles and, along with our work on forces in science, we will explore balanced forces. We will use our understanding of design and science to take place in the Bottle Car Race Challenge.

Linked to our work in history involving conflict in the past, we will explore the use of catapults and examine the mechanisms involved. We will take place in the Plastic Spoon Catapult Challenge to see how far we can propel a chocolate Malteser.

We will explore how cams turn rotary motion into linear movement. We will experiment with different forms, create a crawling caterpillar with each segment on its own cam and use this knowledge to design and make our own toy for younger children.

We will explore levers and discover how to create a range of movements by changing the pivotal point. We will use this knowledge to create our very own Flappy Bird toy.

We will discover pulley power and how heavy loads may be lifted with little energy using a pulley. We will design our own pulley mechanisms and combine them with other machines.

We will explore the use of gears and gear trains. We will discover how to 'gear up' to change slow motion into fast and 'gear down' to change fast motion into slow. We will also discover, linked to our work on forces in science, that there is always a trade-off when using machines. Gearing down may create more speed but the trade-off is less force.

Finally, we will explore the main types of simple machines: including planes, levers, pulleys, wedges and screws. We will find out the uses of each of them and we will take part in the Balloon Blaster Challenge, where we will be required to make a device that uses all of these machines in order to pop a balloon. Throughout all of our challenges and tasks we will need to consider the purpose of our work, and design, make and constantly evaluate and refine our products so that they improve over time. We will also use a range of practical skills and improve our presentation of our products.

As writers we will:

Write explanations about our designs
Write persuasively to seek funding for our designs
Present information about the link between science and design

As artists we will:

Draw, paint, sculpt, create textiles or digital media, as appropriate, to give good quality finishes to our products

As scientists we will:

Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.
Identify the effects of air resistance, water resistance and friction that act between moving surfaces.
Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.

