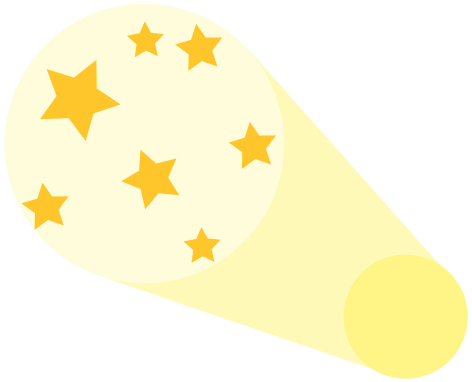
PARENT NOTES: ASTRONOMY

STAR PROJECTOR

Today, we learned about astronomy, and made a projector to see constellations.



ASK YOUR CHILD

What did you make today?
(A star projector)

What are constellations?
(Groups of stars that have a name)

Why do scientists study constellations?
(Astronomers track how constellations move across the night sky. They do this to keep track of satellites, the seasons, and the orbit of different planets around stars)

PARENT NOTES: COMETS!

COMET CATCHER

Today, we learned about comets and asteroids, and made a fun game to try and catch one!

ASK YOUR CHILD

What did you make today?
(A comet catcher)

What's the difference between a comet and an asteroid?
(Comets are made from dust held together with ice. Asteroids are made from rocks and minerals, with no ice).

Why do scientists want to catch a comet?
(To learn more about the conditions at the beginning of our solar system)

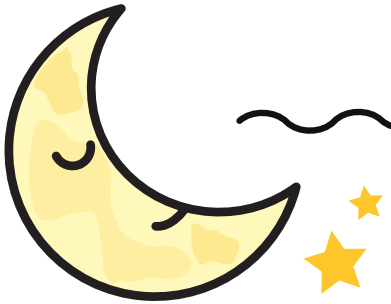
How many times did you catch your comet in 30 seconds?

How can you make your comet harder to catch?
(Make it smaller, lengthen the string)

PARENT NOTES: GRAVITY!

ANTI-GRAVITY GLASS & SPINNING WATER

Today, we learned about gravity, and how it's different on other planets. We learned about centripetal force and air pressure



ASK YOUR CHILD

What did you make today?
(An anti-gravity glass and a spinning water cup)

How can you overcome gravity?
(The anti-gravity glass uses the force of air pressure to push a piece of card up against the water in the glass. The spinning cup uses centripetal force, which when strong enough can overcome gravity and help to keep the water in the cup)

How is gravity different on different planets?
(Gravity is stronger on larger planets, because they have greater mass i.e. more "stuff" in them).

How do you think this science is used by engineers who design theme parks?
(Centripetal force is why you feel heavy in your seat when you go upside down on a roller coaster)

PARENT NOTES: TERMINAL VELOCITY!

PARACHUTE

Today we learned about how spaceships return to earth safely using a parachute then we made our own parachute! We learned about air resistance, shape, and speed as well as how to engineer something to solve a problem.

ASK YOUR CHILD

What did you make today?
(A parachute)

How does a parachute work?
(When a parachute opens, the large surface area traps air and creates air resistance, otherwise known as “drag” which slows down the speed that it falls).

Did you make any changes to your parachute design, and why?

Did you time how long it took for your parachute to fall, what happens when you put a weight in it?

How do you think your parachute would work if you replaced the plastic with paper or a tissue?
(Would likely fall faster as paper is heavier and tissue is porous so air can flow through)

PARENT NOTES: SPACE SUITS!

SPACE SUIT TESTING MACHINE

Today, we learned about the technology which goes into space suits, and how they are formed of many layers with a tough outer layer to stop tiny micrometeoroids from punching a hole in the suit while the astronaut is out in space. We built a space suit testing machine which helps us to test how materials survive when tiny projectiles are fired at them! We learned how more layers can absorb the energy from the projectile which will keep the astronaut safe.

ASK YOUR CHILD

What did you make today?
(A space suit testing machine)

How does an astronaut's space suit work?
(It needs many layers to absorb the force of impact from tiny flying pieces of rock called 'micrometeoroids')

How many layers of tissue does your machine need before the projectile can't get through?

What did your projectiles look like?
(Blu tack, dried pea or lentil, raisin)

Why do you think a space suit testing machine is a good idea?
(lets us build and test things here on earth so we know that astronauts will be safe in space)