

Fidget Spinners

Fidget spinners are gadgets that are made with a ball bearing in the centre and three 'branches' coming from the centre. The 'branches' of the mechanism spin around the middle.

They are made from a range of materials like stainless steel, brass, ceramics, titanium, copper and plastic. The variety of materials used in the bearings alters the vibration and duration of the spin.

How to Spin a Fidget Spinner

Simply hold the middle of the spinner between your index finger and thumb as if you are picking it up. Then, flick one of the outside branches with your middle finger and watch it spin.



Unlike many toys and gadgets, they don't need charging to work so they can be used anywhere at any time.

You can also lie the spinner on a table and hold its centre with your index finger. Use your other hand to flick one of the branches and then let go with your index finger. Depending on the type of spinner you have, it should steadily spin for quite a length of time.

Origins of the Fidget Spinner

Fidget spinners were created by an American inventor, Catherine Hettinger, in the early 1990s. She was ill but still caring for her eight-year-old daughter and found she didn't have the energy to play with her as much as she would have liked to. Catherine began inventing toys for her daughter and between the two of them, they created the first fidget spinner.

In 1997, the fidget spinner was patented, which meant Catherine Hettinger was granted ownership of the design and protected the idea from being copied by others.

However, the patent had to be renewed every few years and in 2005 Hettinger didn't have enough money to renew it. She lost the rights over the design and now many companies make their own versions. The companies are now making a lot of money from sales.

Uses of the Fidget Spinner

Some people believed the fidget spinner would be useful for aiding concentration and focus. It is considered a useful device to help some children who have Attention Deficit Hyperactivity Disorder (ADHD), Autism or other special educational needs that affect concentration or their sensory experiences.

The device can also aid fine motor skills with some musicians being known to use the fidget spinner to exercise their fingers before a performance.

Fidget spinners have been used more recently to decrease stress, through the rotation of the branches, helping the user to 'zone out' and clear their mind. The theory of the fidget spinner being used for reducing stress means that many office workplaces are seeing a rise in workers using them to help ease stress and lower nervous energy.

Fidget Spinners in School

Some schools have banned fidget spinners as they say they are a distraction to other pupils and affect learning potential as well as being a potential safety hazard.

Some parents of children with Special Educational Needs (SEN) are concerned that banning the devices will cause their children to lose concentration and feel 'different' to their peers if they are allowed them but their friends are not.

Questions

1. Why are the bearings made from different materials?

2. Find and copy one word which means 'length of time'.

3. Write three things that you are told about fidget spinners in the introductory paragraphs.

a) _____

b) _____

c) _____

4. What makes fidget spinners different to most hi-tech toys used today?

5. Write a more suitable sub-heading than 'Origins of the Fidget Spinner'.

6. Put these statements in order by numbering them 1 to 4.

A patent was obtained by Hettinger, which lasted until 2005.

A range of companies have the right to make money from fidget spinners.

Hettinger invented the fidget spinner with her daughter.

Hettinger did not have enough money to renew the patent.

7. Identify three types of people who may benefit from using a fidget spinner and explain how it might help them.

Questions

8. Tick 'True' or 'False' for the statements below. Then, rewrite the false statements correctly.

	True	False
Fidget spinners can help the fine motor skills in fingers.		
Fidget spinners could cause people to develop problems with stress.		
Some people with ADHD might find fidget spinners can help to calm them down.		
The rotating branches sometimes increase nervous energy.		

9. Complete the sentences below.

Some schools do not allow fidget spinners because they might...

Parents of children with special educational needs are worried that ...

10. What is your opinion about fidget spinners? Explain your reasons.

Answers

1. Why are the bearings made from different materials?

The bearings are made from different materials because they change the vibration and the duration of the spin.

2. Find and copy one word which means 'length of time'.

duration

3. Write three things that you are told about fidget spinners in the introductory paragraphs.

Accept any three: they are gadgets /made from a ball bearing in the centre with three 'branches' coming from the centre /the mechanism spins around the middle / made from a range of materials like stainless steel, brass, ceramics, titanium, copper and plastic / the bearings alter the vibration and duration of the spin.

4. What makes fidget spinners different to most hi-tech toys used today?

The spinners are very different from most hi-tech toys used today as they don't require charging and can be used anywhere at any time.

5. Write a more suitable sub-heading than 'Origins of the Fidget Spinner'.

Answers will vary. Possible suggestions: The Creation /Invention of Fidget Spinners.

6. Put these statements in order by numbering them 1 to 4.

A patent was obtained by Hettinger, which lasted until 2005.

2

A range of companies have the right to make money from fidget spinners.

4

Hettinger invented the fidget spinner with her daughter.

1

Hettinger did not have enough money to renew the patent.

3

7. Identify three types of people who may benefit from using a fidget spinner and explain how it might help them.

Children who have ADHD or special educational needs; musicians; office workers or anyone who feels stressed at work; people who get 'wound up' and need calming down might benefit from using a fidget spinner because the vibration and the patterns created when they spin can help 'zone' people out and clear their minds.

Answers

8. Tick 'True' or 'False' for the statements below. Then, rewrite the false statements correctly.

	True	False
Fidget spinners can help the fine motor skills in fingers.	✓	
Fidget spinners could cause people to develop problems with stress.		✓
Some people with ADHD might find fidget spinners can help to calm them down.	✓	
The rotating branches sometimes increase nervous energy.		✓

Fidget spinners can help people with stress.

The rotating branches often help people reduce their nervous energy.

9. Complete the sentences below.

Some schools do not allow fidget spinners because they might...

cause distractions for other children /be a safety hazard.

Parents of children with special educational needs are worried that ...

if the fidget spinners are banned, their children will lose concentration, or that they might feel different if they are allowed them in school but their friends are not.

10. What is your opinion about fidget spinners? Explain your reasons.

Answers will vary.

Possible answers: I think fidget spinners should be allowed in school because they can help us learn and help us to concentrate/because they help some children with ADHD and special educational needs to feel calm at school.

I don't think they should be allowed in school because they can distract people who are trying to learn/could be dangerous to other pupils.

Fossils

Fossils are shapes of dead animals and plants that lived millions of years ago made in rock. Usually when something dies it is eaten or decays and disappears. However, when an animal or plant dies and gets covered over, it can stay there and over time, become a fossil.

Dinosaurs

Fossils are really important in understanding what has happened a long time ago. Without them we would not even know that dinosaurs existed! People who study fossils are called palaeontologists and these are the people who have found out what we now know about dinosaurs. However, this only started 200 years ago, so we've only known about dinosaurs for 200 years!



Did you know?

- 'Sue' is the nickname given to the most complete and best preserved Tyrannosaurus Rex specimen ever found.
- The word 'fossil' comes from an old word 'fossilis', meaning 'dug up'.
- Fossils are only found in sedimentary rock.
- The fossils in the pictures are called ammonites. It is the town symbol for Whitby in North Yorkshire. Whitby is good for fossil hunting and long ago, people thought that the ammonites were snakes turned to stone by St. Hilda!

How a Fossil is Made

When some plants or animals die, their body sinks into mud or is buried by sand. This often happens at the bottom of the sea and stops it from rotting or being eaten by other animals. Whilst it is underground, water and minerals seep into the bones and where the bones and body used to be, to make a hard shape. This is squashed under more layers of sand, mud and eventually rock over many, many millions of years.

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Questions About Fossils

1. What does a palaeontologist study?

2. What is the nickname of the best preserved Tyrannosaurus Rex skeleton?

3. What sort of rock are fossils found in?

4. Which town has an ammonite fossil as their symbol?

5. Why have we only got fossils to find out about dinosaurs?

6. What does the Latin word 'fossilis' mean?

7. How come the fossilised animals or plants haven't been eaten by other animals?

8. Why did the author use an exclamation mark at the end of the Fossil Facts section?

9. Why aren't there any fossils of cats that lived twenty years ago?

10. Do you think the ammonites in the pictures look like snakes? Why?

Questions About Fossils

Answers

1. What does a palaeontologist study?

Fossils

2. What is the nickname of the best preserved Tyrannosaurus Rex skeleton?

Sue

3. What sort of rock are fossils found in?

Sedimentary Rock (layered rock over millions of years).

4. Which town has an ammonite fossil as their symbol?

Whitby

5. Why have we only got fossils to find out about dinosaurs?

Because they lived so long ago and nothing else would last that long.

(Discuss what we have now as evidence: photos, film, books, stories passed down through generations etc.)

6. What does the Latin word 'fossilis' mean?

'dug up'

7. How come the fossilised animals or plants haven't been eaten by other animals?

They were buried under mud or sand (or similar).

8. Why did the author use an exclamation mark at the end of the Fossil Facts section?

To add surprise: It is surprising to us today that anyone could believe that snakes could turn to stone. (Discuss why they might have thought that though).

9. Why aren't there any fossils of cats that lived twenty years ago?

Fossils take millions of years to make. Twenty years is not anywhere near long enough.

10. Do you think the ammonites in the pictures look like snakes? Why?

Open ended for discussion.

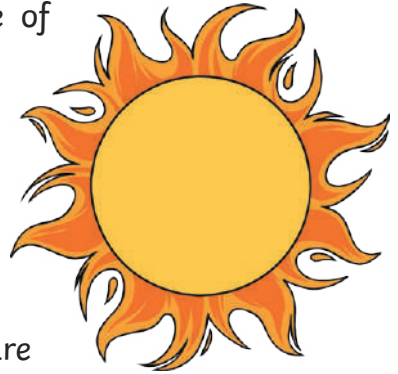
Sun Safety Reading Comprehension

We all need some sun exposure - it's the top source of Vitamin D, which helps our bodies absorb calcium for stronger, healthier bones.

However, repeated, unprotected exposure to the sun's ultraviolet (UV) rays can cause skin damage, eye damage and skin cancer.

Most children get much of their lifetime sun exposure before age 18, so it's important for parents to teach them how to enjoy fun in the sun safely.

Taking the right precautions is very important when protecting your skin.



Sun Exposure

The sun radiates light to the earth, and part of that light consists of invisible UV rays. When these rays reach the skin, they cause tanning, burning, and other skin damage. Sunlight contains three types of ultraviolet rays: **UVA**, **UVB** and **UVC**:

- **UVA** rays cause skin aging and contribute to skin cancer. Because UVA rays pass effortlessly through the ozone layer (the protective layer of the atmosphere, or shield, surrounding the earth), they make up the majority of our sun exposure.
- **UVB** rays are also dangerous, causing sunburns and eye damage (cataracts). They also contribute to skin cancer. Melanoma, the most dangerous form of skin cancer, is associated with severe UVB sunburns that occur before the age of 20. Most UVB rays are absorbed by the ozone layer, but enough of these rays pass through to cause serious damage.
- **UVC** rays are the most dangerous, but fortunately, these are blocked by the ozone layer and don't reach the earth.



Melanin: The Body's First Line of Defense

UV rays react with a chemical called melanin that's found in skin. Melanin absorbs dangerous UV rays before they cause skin damage. The lighter someone's natural skin colour, the less melanin it has and the darker a person's natural skin colour, the more melanin it has to protect itself.

As the melanin increases in response to sun exposure, the skin tans. Those who are regularly exposed to the sun are at a much greater risk. Sunburn develops when the amount of UV exposure is greater than what can be protected against by the skin's melanin.

Avoid the Strongest Rays of the Day

Seek shade when the sun is at its strongest (usually from 10am to 4pm). If you are in the sun during this time, be sure to apply and reapply sunscreen. Most sun damage occurs as a result of incidental exposure during day-to-day activities, not sunbathing! Even on cloudy, cool or overcast days, UV rays travel through the clouds. Clouds don't filter out UV rays and this 'invisible sun' can cause unexpected sunburn and skin damage. People are often unaware that they're developing sunburn on cooler or windy days because the temperature or breeze keeps skin feeling cool.

Cover Up	Use Sunscreen	Use Protective Eyewear
One of the best ways to protect yourself from the sun is to cover up and shield skin from UV rays. Be sure that clothes will screen out harmful UV rays by placing your hand inside the garments and making sure you can't see it through them. Babies under 6 months should be kept out of the sun.	Select an SPF of 30 or higher to prevent sunburn and tanning, both of which are signs of skin damage. Choose a sunscreen that protects against UVA and UVB rays. For sunscreen to do its job, it must be applied correctly. So be sure to: <ul style="list-style-type: none"> • Apply sunscreen whenever you are in the sun and reapply often (every 2 hours). • Apply a water-resistant sunscreen around water or when swimming. 	Sun exposure damages the eyes as well as the skin. The best way to protect eyes is to wear sunglasses. Not all sunglasses provide the same level of ultraviolet protection; Purchase sunglasses with labels ensuring that they provide 100% UV protection.

Sun Safety Questions

1. How does Vitamin D help our bodies?

2. What are the three types of ultraviolet rays which radiate from the sun? Which is the least dangerous and which is the most dangerous?

3. How does the ozone layer work to protect us from the sun's rays?

4. How does melanin protect the skin?

5. Why does sunburn happen?

6. When is the sun at its strongest?

7. True or false: Clouds filter out UV rays.

8. What is meant by 'invisible sun'?

9. What precautions should parents of babies take?

10. Why is it important to reduce 'tanning'?

11. True or false: Sunscreen should protect against UVC rays.

12. What should you look for when purchasing sunglasses?

Answers

1. How does Vitamin D help our bodies?

Vitamin D helps our bodies by absorbing calcium for stronger, healthier bones.

2. What are the three types of ultraviolet rays which radiate from the sun? Which is the least dangerous and which is the most dangerous?

UVA, UVB, UVC. UVA are the least dangerous to humans. UVC rays are the most dangerous to humans.

3. How does the ozone layer work to protect us from the sun's rays?

It protects us completely from UVC rays and from some UVB rays.

4. How does melanin protect the skin?

Melanin absorbs dangerous UV rays before they cause skin damage.

5. Why does sunburn happen?

Sunburn develops when the amount of UV exposure is greater than what can be protected against by the skin's melanin.

6. When is the sun at its strongest?

Usually from 10am to 4pm.

7. True or false: Clouds filter out UV rays.

False

8. What is meant by 'invisible sun'?

Even on cloudy, cool or overcast days, UV rays travel through the clouds.

9. What precautions should parents of babies take?

Babies under 6 months should be kept out of the sun.

10. Why is it important to reduce 'tanning'?

As the melanin increases in response to sun exposure, the skin tans.

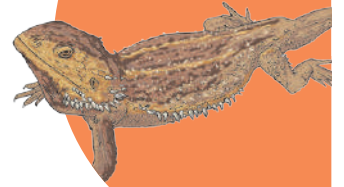
11. True or false: Sunscreen should protect against UVC rays.

False

12. What should you look for when purchasing sunglasses?

Purchase sunglasses with labels ensuring that they provide 100% UV protection.

Pet Care of a Bearded Dragon



Bearded dragons are reptiles. Their name comes from the spikey folds of skin around their neck, which inflate and turn black when they are excited or afraid.

They originally come from the dry scrublands of Australia. Their captive environment needs to be similar to their natural environment.



Did You Know?

- Bearded dragons are diurnal which means they are active during the day.
- They are known as 'beardies'.
- They originally came from the dry scrublands of Australia.

Environment

Bearded dragons must be kept in a large glass tank called a vivarium. It needs to be 120cm long and 60cm high for one dragon. Beardies can grow up to 45cm long and need room to move around and stretch out.

Bearded dragons need the vivarium to have a warm end and a cool end, so that they can control their body temperature. Putting a thermostat in the vivarium will make sure the temperature does not change.

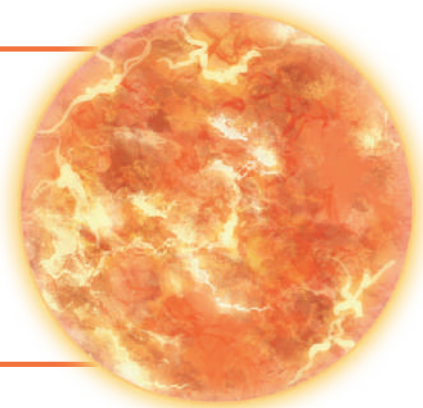
These lizards like to dig, so put a mixture of soil and sand, bought from the reptile shop, on the bottom of the vivarium.

Two's Company

Bearded dragons should not live together as they fight for living space. The males chase each other and the females bite off a rival's toes!

Light

A special light which gives off ultraviolet (UV) rays must be in the vivarium. Bearded dragons use UV light to make calcium in their skin. They would normally get this from the sun in the wild.





Diet

Bearded dragons eat live insects and some plants. They must be fed in the morning so that they can digest their food all day.

Safe Greens	Live Food
watercress	
rocket	
cress	crickets
grated butternut squash	locusts
dandelions	calciworms
clover	
plantain leaves	

Signs of a healthy lizard:

- clear, bright eyes;
- thick base to its tail;
- hips will not be sticking out.

Signs of calcium deficiency:

- muscle twitching;
- swollen legs;
- fragile bones;
- deformed limbs, spine, jaw.

Sunbathing Lizard

Take your bearded dragon out into the garden on sunny, warm days. This helps them to get natural UV light from the sun. Make sure there is some shade and remember to watch them all the time.



Questions

1. What sort of animal are bearded dragons?

2. What other name do bearded dragons have?

3. What do captive bearded dragons need to be kept in?

4. Why should there be a thermostat in the vivarium?

5. What does UV stand for?

6. Should bearded dragons live together? Explain your answer.

7. When should a bearded dragon be fed?

8. Give three signs of a healthy bearded dragon.

9. Why should you take a bearded dragon out into the garden on sunny days?

Answers

1. What sort of animal are bearded dragons?
Bearded dragons are reptiles.
2. What other name do bearded dragons have?
Another name that bearded dragons have is 'beardies'.
3. What do captive bearded dragons need to be kept in?
Captive dragons need to be kept in a large, glass tank called a vivarium.
4. Why should there be a thermostat in the vivarium?
There should be a thermostat in the vivarium because bearded dragons need to be in a place where the temperature does not change.
5. What does UV stand for?
UV stands for ultraviolet light.
6. Should bearded dragons live together? Explain your answer.
No, bearded dragons should not live together because they fight for living space/the males chase each other/the females bite each other's toes!
7. When should a bearded dragon be fed?
A bearded dragon should be fed in the morning.
8. Give three signs of a healthy bearded dragon.
Three signs of a healthy bearded dragon: (accept any three): clear, bright eyes; thick base to its tail; hips will not be sticking out.
9. Why should you take a bearded dragon out into the garden on sunny days?
You should take a bearded dragon outside on sunny days, to get natural UV light.

The London Marathon

What Is a 'Marathon'?

The marathon race comes from a Greek legend that tells of a soldier who was sent from the battlefield of Marathon to Athens with news that Greece had beaten the Persian army. It is said that the soldier ran the entire distance without stopping, bursting into the assembly with his good news before collapsing and dying.

What Is the London Marathon?

The London Marathon is a long-distance running race. Runners from around the world come to take part in the race, which is well known for the historic route around London and the carnival atmosphere of the thousands of spectators. The London Marathon course is 26 miles and 385 yards long and takes runners past many famous sites in London, for example, the Cutty Sark.



When Was the First London Marathon?

The first London Marathon took place on 29th March, 1981. It was the idea of John Disley and Chris Brasher, who had recently taken part in the New York Marathon. They were keen to create a London Marathon that would show off the famous sites in the city and prove that Britain was best when it came to organising major events. The first London Marathon was a huge hit! 20,000 people entered and 7,747 runners took to the start line with thousands more filling the streets of London to cheer them on.

Who Can Take Part in the London Marathon?

- Elite runners (the best, fastest runners in the world)
- Club and fun runners
- Wheelchair and Paralympic runners

Many people choose to run for a charity and raise money for a good cause. More than three quarters of the competitors now run for a charity. Sometimes, they run the course in fancy dress.

The London Marathon: Facts and Figures

- Major Tim Peake ran the London Marathon on board the International Space Station!
- The fastest man to run the London Marathon was Eliud Kipchoge from Kenya in a time of 2:03.05.
- The fastest woman was Paula Radcliffe of Great Britain in a time of 2:15.25.
- The fastest marathon runner dressed as a plant was Lee Goodwin with a time of 3:02.43.
- The slowest London marathon was run by Lloyd Scott, who wore a deep-sea diving suit and finished the marathon in five days, eight hours, twenty-nine minutes and forty-six seconds! (The organisers have since set a 24-hour time limit in which to complete the London Marathon.)



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Questions

1. In your own words, explain where the term 'marathon' comes from.

2. What is the London Marathon?

3. Why might people be keen to take part in the London Marathon?

4. When was the first London Marathon?

5. Which event inspired John Disley and Chris Brasher to create the London Marathon?

6. Why did they want to create a London Marathon?

7. How do you know the London Marathon was a hit?

8. What is the largest group of runners at the London Marathon?

9. Why do you think people choose to raise money for a good cause?

10. Why was it unusual for Major Tim Peake to run the London Marathon?

Answers

1. In your own words, explain where the term 'marathon' comes from.
Answers should include reference to the Greek legend of a soldier running from Marathon to Athens with news of a great victory.
2. What is the London Marathon?
The London Marathon is a long-distance running race.
3. Why might people be keen to take part in the London Marathon?
People are keen to take part in the London Marathon because of its historic route, carnival atmosphere and famous sites.
4. When was the first London Marathon?
The first London Marathon was held on 29th March, 1981.
5. Which event inspired John Disley and Chris Brasher to create the London Marathon?
The event that had inspired John and Chris was the New York Marathon.
6. Why did they want to create a London Marathon?
They wanted to create a London Marathon in order to show off the sites of the city and to prove that Britain was the best when it came to organising major events.
7. How do you know the London Marathon was a hit?
We know that the marathon was a hit because 20,000 people entered the race and 7,747 actually took part, while thousands more lined the streets.
8. What is the largest group of runners at the London Marathon?
The largest group of runners in the London Marathon are charity runners who make up more than three quarters of the field.
9. Why do you think people choose to raise money for a good cause?
Answers may vary but could include reference to the challenge of the race, the community spirit or the fun.
10. Why was it unusual for Major Tim Peake to run the London Marathon?
It was unusual for Major Tim Peake to run the London Marathon because he was in space at the time!