dragonfly tv

My Science Journal

Science Museum Edition

This journal belongs to:

_____

DragonflyTV Speed Demons

1. Speed Skating Superstars!
-Sarah, Lisa, Ned & Eric

We're speed skaters, always looking to shave a few tenths of a second off our race times. Eric had an investigation idea that we all helped explore: How should you enter a turn on the speed skating short track...in tight, out wide, or in between? What do you think we found out?

A. Entering in tight always gets you through most quickly.
B. Taking the turn wide is more likely to result in a wipeout.
C. Taking the turn at the middle position maximizes both our speed and control.

Answer
C. Even though the tight turn is a shorter distance to travel, we found it hard to hold that turn without wiping out (which Ned learned the hard way!). Most of us skated through the turn most quickly from the middle position, and we felt in control the whole way.

2. Down from the Mountains
-Sean, Ben and Neil

When we want a major thrill, we hit the mountain with our mountain boards. A mountain board is like an oversize skateboard with big inflatable tires, and we ride them down gravel mountain roads. We wanted to know: what happens to our ride when we inflate our wheels to soft, hard, or somewhere in between? Want to guess what we found out?

A. Soft tires give you the most speed.
B. Medium tires give you the most speed.
C. Hard tires give you the most speed.

Answer
B. Hard tires, meaning tires with higher air pressure, didn't give us the fastest time, like we thought they would. With our tires at a medium pressure, we were able to cruise at a good speed, and stay in control.

Museum Madness!

Here is a list of things you might find in a science museum. Look for these words hidden in the puzzle. Be sure to check backwards, forwards, up and down, and diagonally!

A D I N O S A U R X J O
M 3 V N J Y R E L L A G
A X D B S T O B O R P F
G T W M S E B I E E S O
N S N T O L O T G L H S
E C E E A V U G 3 E E S
T I O M M P I Y N D L I
Z E I P M I R E S O L L
3 N R O A T R L U M A Y
A T C R S T C E S N I E
L I R Y O N A T P U B L
A S O 3 T I B I H X E L
S T H E A T E R Y U E O
E Z N O I T C E L L O C
R I N L A R E N I M I N

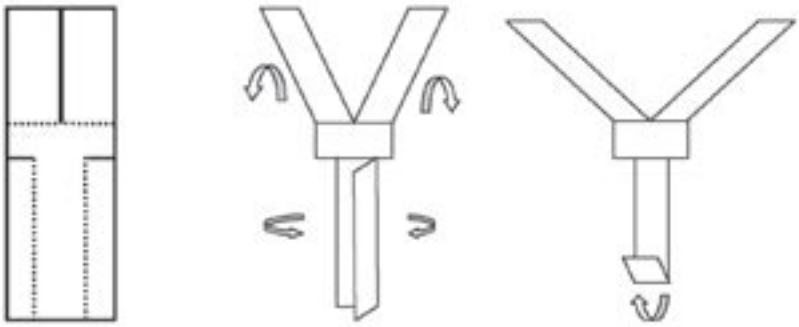
3D MOVIE
ANIMAL
COLLECTION
COMPUTER
DINOSAUR
EGG
EXHIBIT
EXPERIMENT
FOSSIL
GALLERY
INSECT
LASER
MAGNET
MINERAL
MODEL
ROBOT
SHELL
SCIENTIST
THEATER
TOYS

Super Do It!

What?
Make your own whirligig!

Materials:
- paper
- scissors

How?
1. Make a paper whirligig, following the diagram below.
2. Using the pattern, try making different sizes of whirligig.
3. Drop your whirligig from a staircase or balcony (be safe!). Watch it twirl to the ground!
4. Here's the challenge: design a whirligig that falls SLOWLY to the ground.



What happened?
As the whirligig falls, air pushes on the blades of the whirligig, making it spin. If you can come up with a lightweight, BIG whirligig, you should have one that slowly spins to the ground. Have races with your friends... last one down WINS!

Log on to DragonflyTV at
http://pbskids.org/dragonflytv/superdoit/whirligig.html
and tell us your results!

DragonflyTV Science Scramble

Unscramble these words that are things you'll learn about at a science museum, in the ELECTRICITY exhibit!

1. YBRATET _____
2. GAMETN _____
3. IGHGNLTI _____
4. TOLV _____
5. ETNURCR _____
6. NEGETRARO _____
7. SLATE LOIC _____ _____ (2 WORDS)
8. CLETENOR _____
9. CRITCUI _____
10. WREPO _____

BONUS WORDS

Try to unscramble the names of these important scientists!

11. FLINKNAR _____
12. FADARYA _____

Answers:
Battery; Magnet; Lightning; Volt; Current; Generator; Tesla coil; Electron; Circuit; Power

Bonus words: Franklin; Faraday

Natural Treasures!

Do you have a collection of things? Maybe you collect baseball cards, or rocks, or stamps, or bugs? Nature centers have collections, too. At your nature center, find a collection that is on display. Answer these questions about the collection.

1. What kind of collection is it (rocks; eggs; dinosaurs, etc.)?

_____

2. How many examples are on display?

_____

3. Are the things in the collection considered animal, vegetable, mineral, or other?

_____

4. Are the items in this collection things you could find where you live? If no, why not?

_____

5. Where on earth are/were the items in this collection found?

_____

6. If I could make a collection for the science museum, I would make a collection of

_____

Log on to the DragonflyTV Web site at www.pbskids.org/dragonflytv/message_board/index.html and tell us about your favorite collection!

Super Do It!

What?
Make a rubber egg!

Materials:
- a cup
- vinegar
- a raw egg
- alternate: a chicken drumstick bone

How?
1. Place the egg in cup, then pour in enough vinegar to cover the entire egg. What do you notice about the egg shell? Look closely!
2. Leave your egg in the vinegar overnight. Carefully remove the egg from the cup and rinse it off. What does your egg look and feel like now?
3. If you don't have an egg, try a chicken bone. What happens to it after one day in vinegar?

What happened?
The vinegar slowly dissolves the minerals in the shell of the chicken egg, leaving the rubbery egg membrane exposed (or should I say, egg-posed?!). Now the egg feels like a water balloon. If you try a chicken bone, it will become rubbery, too!

Log on to DragonflyTV at
www.pbskids.org/dragonflytv/superdoit/eggcellent_idea.html
and tell us your results!

How can you pedal a bike up to 80 miles per hour?

 = A or R

 = D or N

 = C or H

 = F or L

 = G or U

 = I or T

 = O or S

 = E

— — — — — — — — — — — —

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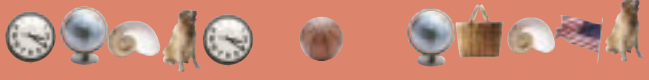


— — — — — — — — — — — — — — —

Answer

Reduce the air friction using a shield!

Log on to www.pbskids.org/dragonflytv and look for more

T-Rex Word Scramble!

Make as many words as you can from the letters of everyone's favorite dinosaur.
T-Y-R-A-N-N-O-S-A-U-R-U-S R-E-X
Come up with as many 3-, 4-, 5-, 6-, even 7-letter words as you can!

Bug Lady!

Betty Faber

Entomologist Betty Faber studies insects at the Liberty Science Center in New Jersey. Her friends call her "Betty Bug" because she spends most of her time studying cockroaches. She admits that she was scared of flying cockroaches when she was a girl. Betty turned that fear into curiosity. She's learning how cockroaches have managed to survive for more than 250 million years.

Bug Magnet

Have bugs ever ruined your picnic? Make an experiment out of it! Place a dab of jelly on a napkin. On a separate napkin place a dab of peanut butter, or a chunk of banana, or any food that you like. Set the napkins outdoors for an hour or two, then go back and see what kinds of bugs found their way. Do fruity things attract more bugs than other kinds of foods?

Log on to DragonflyTV at www.pbskids.org/dragonflytv and leave a message on the message boards telling us what you found out!

Super Do It!

What?
Go fishing for ice cubes!

Materials:
- ice cubes
- cup of water
- string
- salt

How?
1. Float an ice cube in the cup of water.
2. Carefully lay one end of a piece of string on the floating cube.
3. Sprinkle a pinch of salt onto the string and wait for about 30 seconds. Pick up the string, and WOW, you caught an ice cube!
4. But what else can you use besides salt? Try sugar, pepper, sand, flour, you name it. See what works, and what doesn't, and try to figure out why!

What happened?
Salt that dissolves on the ice cube lowers its freezing point, which means that it actually melts faster than normal in the cup. After some of the salt washes away, a little bit of the water on the cube re-freezes, trapping the string with it. Substances that dissolve in water can lower the freezing point of ice, while things that don't dissolve can't.

DragonflyTV Space Scientists!

1. Mission: Find Water on Mars!
- Trey and TJ

We heard all the buzz about the Mars expeditions, and wondered: How do you find water hidden below the surface of Mars? We've seen photos on the Web showing Infrared (IR) pictures of Mars, so we thought we'd try this: Can an IR camera help find underground water in the desert, where we live? How do you think an IR camera works?

A. An IR camera can detect temperature differences in surfaces.
B. An IR camera can detect different chemicals.
C. An IR camera can see through things, just like an x-ray camera.

Answer:
A. An infrared camera "sees" differences in the temperature of things. If water existed just below the surface of the hot desert sand, the water might cool the sand, and the camera could see the difference.

2. Falling in Microgravity!
- Thianna and Sammy

We can't wait to get be astronauts someday, and float around in microgravity. But we learned that you can experiment with microgravity right here on Earth. We ordered a microgravity dropbox from NASA, and put some experiments inside. What do you think happens to fizzing soda bubbles in microgravity?

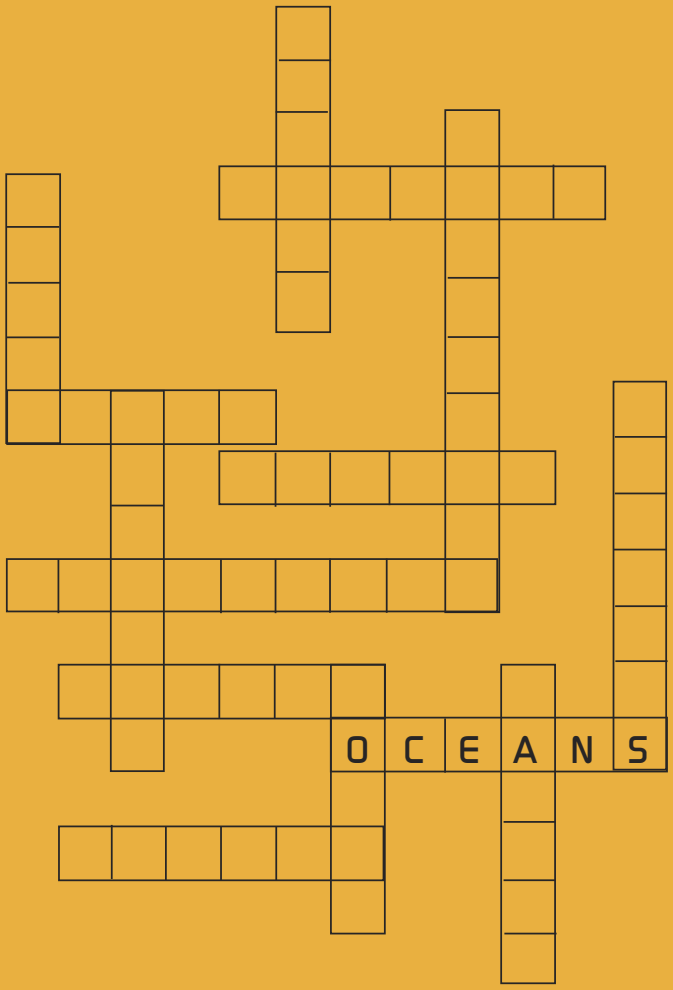
A. The bubbles disappear.
B. The bubbles stop rising.
C. The bubbles expand.

Answer:
B. Believe it or not, bubbles need gravity to rise! So, in microgravity, the bubbles stopped rising, and just floated where they were!

Learn more about these investigations by logging on to www.pbskids.org/dragonflytv.

Science Museum Crossword

Below is a list of science subjects you can learn about at the science museum. Fill in the words into the blank spaces of the crossword.



SOUND
SPACE
WAVES
MOTION

OCEANS
PLANTS
ROBOTS

ANIMALS
MAGNET
PHYSICS

WEATHER
HUMANBODY
CHEMISTRY

Match the Fruit to the Tree!

Here are pictures of different fruits or nuts. Draw a line matching the fruit to the tree it came from.

1. coconut 

2. star fruit 

3. cherries 

4. walnut 

A. 

B. 

C. 

D. 

Answer:
1-B; 2-D; 3-A; 4-C

Log on to www.pbskids.org/dragonflytv/games to play some more matching games!

Trading Post Mix-up!

Five young natural scientists (Nina, Ravi, Candy, Ben, and Michala) each brought one object to their nature center. Can you figure out who brought each item? Use the clues to match each person to his or her object. You can use the grid to help eliminate choices as you go through the clues (put 'yes' or 'no' into a square, according to what the clue tells you).

Person	pine cone	shark tooth	snakeskin	bird nest	agate
Nina					
Ravi					
Candy					
Ben					
Michala					

Clues:

1. Nina's object did not come from a plant.
2. Ravi's object was formed hundreds of thousands of years ago.
3. Candy's object fell from a tree.
4. Ben's object carries seeds.
5. Michala's object was found at the seashore.

Answer:
Nina - snakeskin; Ravi - agate; Candy - bird nest; Ben - pine cone; Michala - shark tooth

DragonflyTV Themes

DragonflyTV is all about real kids, just like you, doing REAL SCIENCE! Check your local PBS listings to tune into episodes on these great topics:

Season 1	Season 2	Season 3
Investigate I	Investigate II	Investigate III
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Animal Behavior	Sports Science	Wind
Water	Spinning	Forensics
Rocks	Propulsion	Engineering
Flight	Human Body	Earth Systems
Weather	Sound	Animal Behavior
Technology	Technology	Speed
Plants	Ecosystems	Health
Air	Underwater	Habitats
Human Behavior	Mammals	Games
Space	Earth Systems	Space/Astronomy
Human Body	Creepy Crawlies	Sled Dogs

If you have great investigations, DragonflyTV wants to know about them! Visit our Web site at pbskids.org/dragonflytv, or write to us at:

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