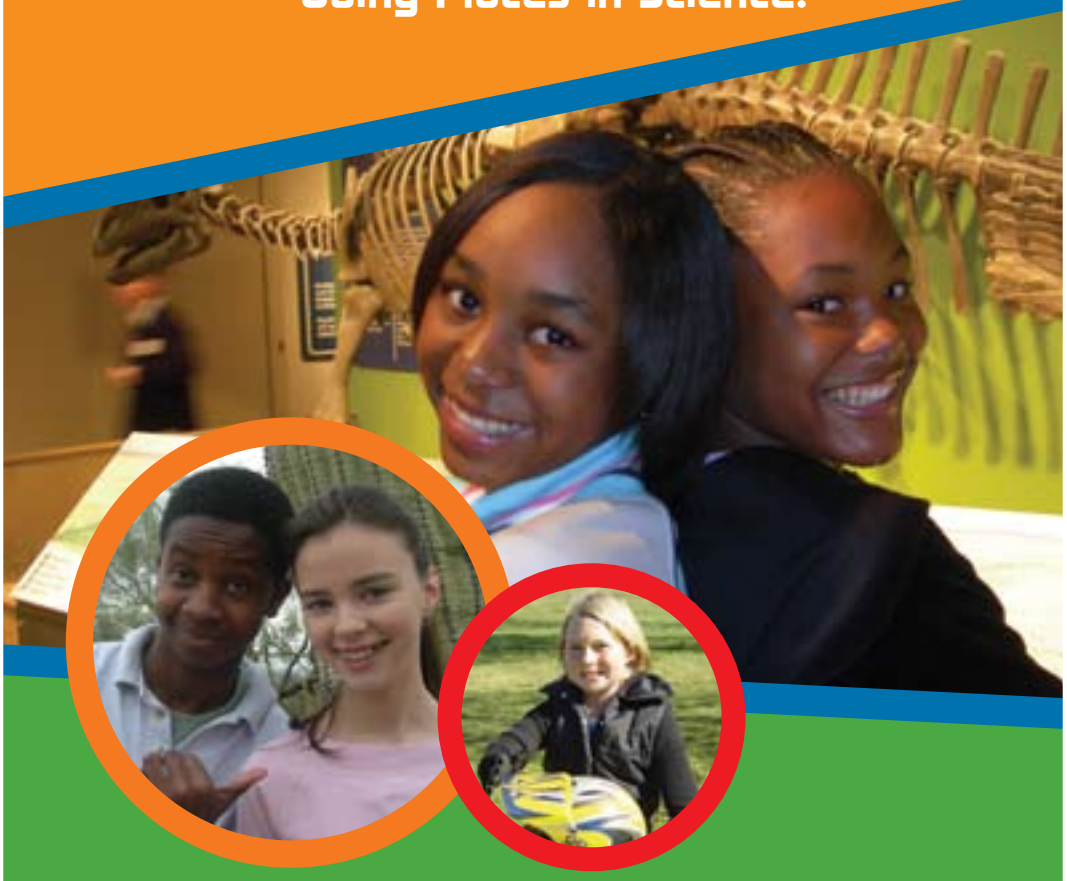
dragonfly tv

GPS Going Places in Science

My Science Journal

GPS Edition
Going Places in Science!



This journal belongs to:

_____

DragonflyTV
Sports Superstars

1. Luge

We're Emily and Jennifer, and when winter comes, we don't just go sledding, we LUGE! Luge is one of the fastest sports on ice, and getting a fast start means the difference between winning and losing. We investigated whether we could improve our start times by paddling more with our hands. What do you think we found out?

A. Our fastest start came when we didn't paddle at all.
B. Paddling three or four times improved our start time.
C. Paddling five or six times is best of all!

Answer

B. Paddling at the start did improve our time, up to a point. When we tried to paddle five times, we found that we actually started to lose speed. Three or four paddles worked best for us.

2. Baseball

We're Reed and Nick and baseball is our game! We've heard our coach use the term "sweet spot" when we're at bat. That's when a player hits the ball at just the right spot on the bat—and whoosh!—the ball goes really, really far. We did an experiment to figure out how a wooden bat compares to an aluminum bat, when you find the sweet spot. How do you think our results came out?

Answer

B. We found that hitting the sweet spot makes the ball go farther, no matter what kind of bat you use. However, using the aluminum bat usually made the ball go farther, compared to using the wooden bat.

Watch these segmeants online at
pbskidsgo.org/dragonflytv/show/index.html

DFTV GPS MANIA!

Find these DFTV stories and the cities where they took place in the puzzle below. Remember, the words can go forwards, backwards, up and down, and diagonally!

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

ANIMAL SCENT
BASEBALL
BIODIVERSITY
BODY ELECTRICITY
BOGS
CACTUS
CALIFORNIA FISH
DINOSAURS
DOGHOUSE
EARTHQUAKES
LIGHT AND COLOR
LUGE
MUSIC AND SOUND
ROLLER COASTER DESIGN
SAILBOATS
DALLAS
LOS ANGELES
MINNEAPOLIS
NEW YORK
PHOENIX
PITTSBURGH
SAN FRANCISCO

Cloud in a Bottle

What?

Make a cloud in a bottle!

Materials:

- an adult helper!
- a clear plastic 2-liter bottle
- water
- matches

How?

1. Pour 2 inches of warm tap water into the bottle.
2. Light a match and let it burn for 2 seconds before blowing it out.
3. Let as much smoke as possible drift into the bottle before putting the cap on tightly.
4. Shake the bottle for 1 minute.
5. Squeeze the bottle hard for a few seconds, then release your squeeze. Do it again until a cloud forms.

What happened?

The water puts moisture into the air inside the bottle. The smoke particles give the moisture a place to collect. When you squeeze and then release, the pressure in the bottle goes down just enough to cool the air inside slightly, letting tiny droplets form on the smoke particles... Instant Cloud!

Log on to DragonflyTV at pbskidsgo.org/dragonflytv/superdoit/cloudinabottle.html and tell us your results!

DragonflyTV Science Surprise

1. What was New York City's Central Park like before the park was built?

A. It was a swamp.
B. It was a forest.
C. It was a desert.

Answer

A. Central Park began life as a muddy swamp in the mid-1800s. To allow plants and trees to grow there, 500,000 cubic feet of topsoil was carted in from New Jersey. Earth was manually dug up and huge boulders blasted out. By 1873, more than 10 million cartloads of material had been hauled through the Park. This material included more than 4 million trees, shrubs, and plants, representing more than 1400 species that lay the foundation for what is today's Central Park.

2. What lives in Los Angeles' La Brea Tar Pits?

A. nothing!
B. worms
C. microbes

Answer

C. New research at the Rancho La Brea Tar Pits has revealed hundreds of new bacterial species that have never been described before. These species exist in thriving microbial communities within the thick tar of the Tar Pits. The bacteria are living microorganisms that have adapted to life in the asphalt and are able to grow where you wouldn't think it's possible. Some of these microorganisms may also have uses for treatment of oil wastes and cleanup of contaminated soils.

Log on to pbskidsgo.org/dragonflytv to learn about more science surprises!

Super Scientists!

Tyrone Hayes

Frog Scientist

Tyrone researches how chemicals in the environment, such as pesticides, keep amphibians from growing normally. His field work with frogs takes him from Berkeley, California, to points all across the United States and as far away as East Africa! Tyrone's findings help people see the need for improving the environment everywhere.

Manuela Veloso

Robot Scientist

This artificial intelligence (AI) researcher from Carnegie Mellon University programs small robot dogs to play soccer in international World Cup competitions. But soccer is not Manuela's real game. Her primary goal (pardon the pun!) is increasing the learning abilities of her 'bots.

Log on to pbskidsgo.org/dragonflytv/scientists/index.html to learn about more cool scientists!

Hoopster

What?

Make a hoopster!

Materials:

- scissors
- a ruler
- an index card
- tape
- a straw

How?

1. Cut your index card lengthwise into 3 equal-length strips.
2. Curl the first strip into a hoop.
3. Tape the remaining strips end-to-end and curl them into a big hoop.
4. Tape each hoop to different ends of your straw.
5. Now launch your hoopster and watch it soar!

What happened?

If you just throw a straw without any hoops on it, it flutters to the ground. When hoops are attached, they give the straw stability, keeping it from fluttering, allowing it to glide a long way!

Log on to DragonflyTV at pbskidsgo.org/dragonflytv/superdoit/hoopster.html and tell us your results!

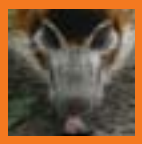
DragonflyTV
Animal Detectives

Biodiversity

We're Jessica and Stanley, and we're exploring the African rainforest on our home turf in New York City! We went to the Bronx Zoo, where they have animals and plants just like those in the African Congo. We learned how many different animals can all live together in the same rainforest (that's called biodiversity). Draw a line from each animal to the part of the rainforest where it lives.

1. Colobus Monkey

2. Red River Hog



3. Gorilla

4. Mandrill

5. Hornbill

A. Emergent Layer (very top of the forest)

B. Canopy (high in the trees)

C. Understory (middle layer of trees)

D. Shrub Layer (close to the ground)

E. Forest Floor (on the ground)

Answers
1 - B; 2 - E; 3 - D; 4 - C; 5 - A

Log on to
pbskidsgo.org/dragonflytv/games.html
to play some more matching games!

DFTV Word Scramble!

DragonflyTV is Going Places in Science!
Make as many words as you can from the letters in the words

G-O-I-N-G P-L-A-C-E-S

Come up with as many 3-, 4-, 5-, or 6-letter words as you can!

Card Bridges

What?

Make a file card bridge!

Materials:

- 2 stacks of books
- index cards
- lots of pennies

How?

1. Make 2 equal-size stacks of books.
2. Lay 1 index card over the gap between the books.
3. Count the number of pennies you can put on the bridge before it collapses.
4. Now try using a folded card.

What happened?

Folding the card adds structural strength, allowing the card to hold much more weight than when it is flat!

Log on to DragonflyTV at pbskidsgo.org/dragonflytv/superdoit/filecardbridge.html and tell us your results!

How do the gardeners at Dallas' Discovery Gardens control insect pests?

 = T or D

 = B or S

 = G or H

 = O

 = A

 = E

 = U

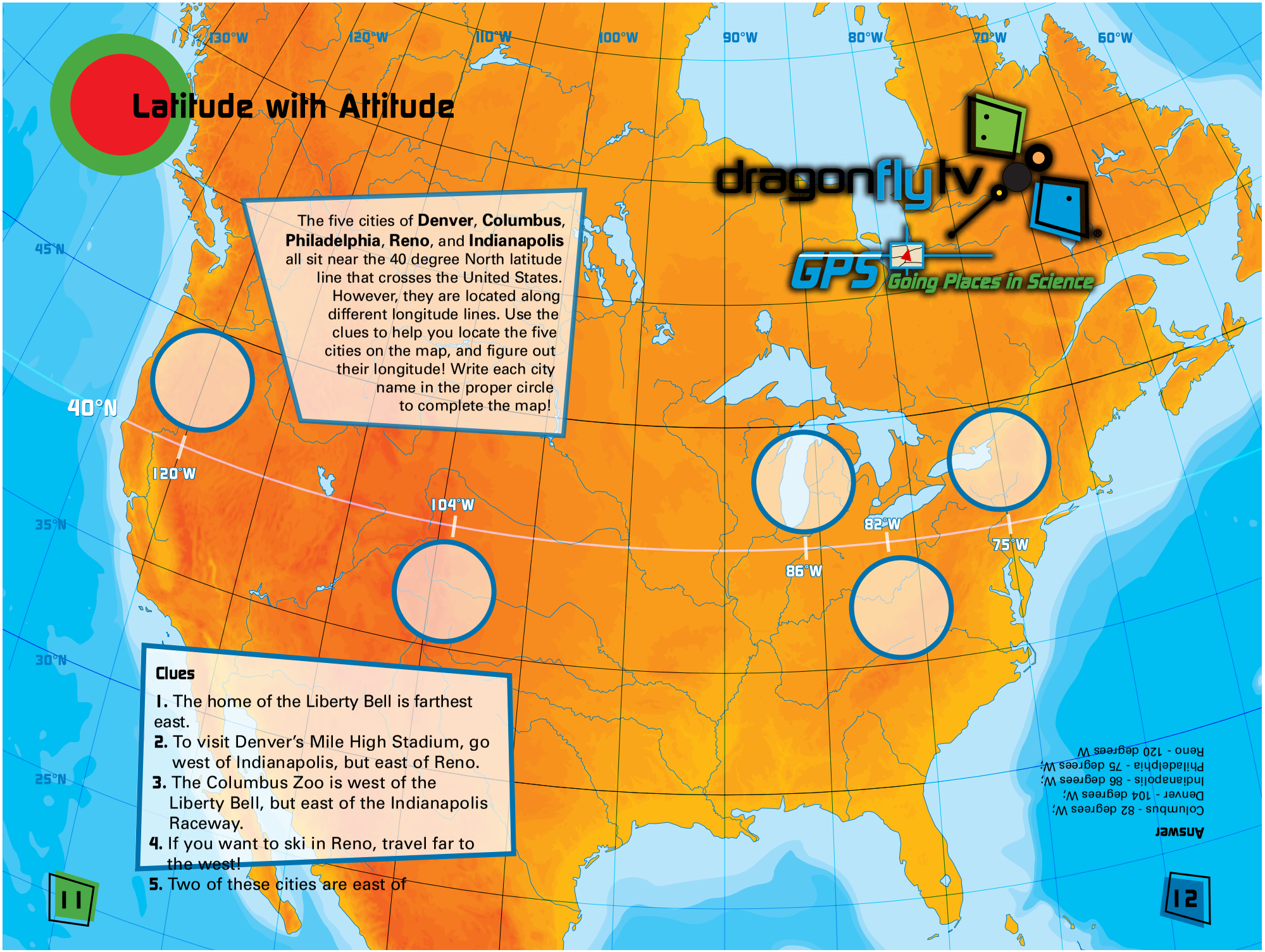
 = Y

— — — — — — — — — — — — — — — —

— — — — — — — — — —

Answer
They use good bugs to eat bad bugs!

Log on to DragonflyTV to check out other Riddles and Games. Go to pbskidsgo.org/dragonflytv



Latitude with Attitude

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GPS Going Places in Science

The five cities of **Denver**, **Columbus**, **Philadelphia**, **Reno**, and **Indianapolis** all sit near the 40 degree North latitude line that crosses the United States. However, they are located along different longitude lines. Use the clues to help you locate the five cities on the map, and figure out their longitude! Write each city name in the proper circle to complete the map!

Clues

1. The home of the Liberty Bell is farthest east.
2. To visit Denver's Mile High Stadium, go west of Indianapolis, but east of Reno.
3. The Columbus Zoo is west of the Liberty Bell, but east of the Indianapolis Raceway.
4. If you want to ski in Reno, travel far to the west!
5. Two of these cities are east of

Answer

Columbus - 82 degrees W;
Denver - 104 degrees W;
Indianapolis - 86 degrees W;
Philadelphia - 75 degrees W;
Reno - 120 degrees W

Super Scientists!

Dave Morris

Ethnobotanist

Dave is an ethnobotanist with the Pueblo Grande Museum in Phoenix, where he studies how native peoples in Arizona gathered plant materials for buildings, everyday objects, and spiritual uses. Dave says his own Native American ancestry makes him especially interested in recovering lost knowledge about plants and their uses.

Karin Block

Volcano Scientist

Karin says, "Science Rocks!" She ought to know. Karin is an igneous petrologist —a volcano scientist—who studies the history of rocks beneath New York. Her work takes her across the Hudson River, where she investigates the rocks that form the Palisades Sill in New Jersey.

Log on to
pbskidsgo.org/dragonflytv/scientists/index.html
to learn about more cool scientists!

DragonflyTV Science Scramble

Unscramble these words that are all things you can learn about at a science center, museum, zoo, or aquarium. Be sure to watch DragonflyTV: GPS to see real kids learning about these same topics!

1. G U L E _____
(Hint: a sport in the Winter Olympics)

2. L I A S T O B A _____
(Hint: something that floats)

3. T A C U S C _____
(Hint: something in the desert)

4. N I R A R O F S T E _____ _____
(Hint: two words, where lots of animals live)

5. H O G U S O D E _____
(Hint: Rover's hangout)

6. G L I H T D N A L O R O C _____ _____ _____
(Hint: three words, like a rainbow)

7. S E B A B L A L _____
(Hint: a summer sport)

8. S H I F _____
(Hint: they swim in the ocean)

9. S I N O R A D U S _____
(Hint: a blast from the past)

10. G O B P E L O P E _____ _____
(Hint: a kind of mummy)

Answers:
Luge; Sailboat; Cactus; Rain Forest; Doghouse; Light and Color; Baseball; Fish; Dinosaurs; Bog People

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GPS Going Places in Science

Check out DFTV video podcasts on iTunes!

DragonflyTV is traveling across the country, looking for real kids doing real science! Check your local PBS listings to tune in for episodes on these topics:

City	Stories
Pittsburgh, PA	Roller Coaster Design; Bogs
Los Angeles, CA	California Fish; Sailboat Design
Minneapolis | Saint Paul, MN	Animal Scent; Body Electricity; Music and Sound
Dallas | Fort Worth, TX	Baseball; Dinosaurs
Phoenix | Tuscon, AZ	Cactus; Doghouse
New York, NY	Luge; Biodiversity
San Francisco, CA	Earthquakes; Light and Color

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

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