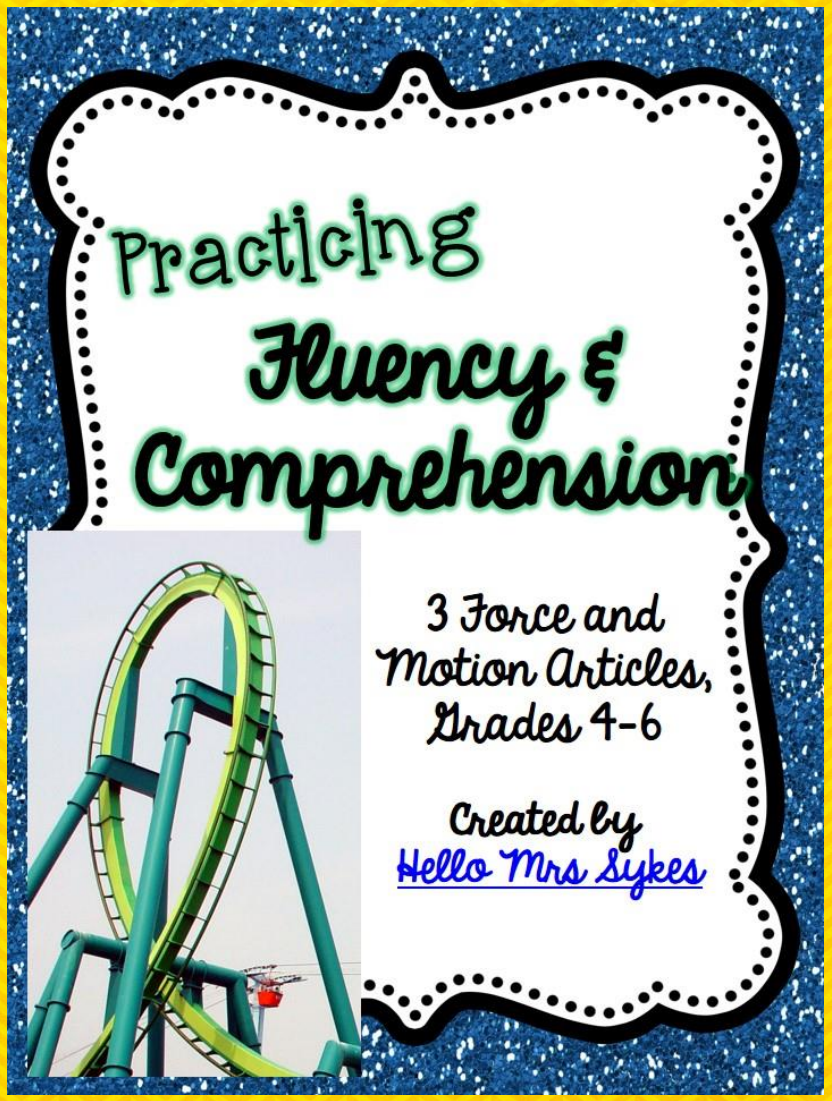
Practicing Fluency and Comprehension in grades 4-6



Each Article has a Graphic Organizer

Name: _____ Date: _____

Around and Around

Amusement parks can be fun, especially the rides! Riders who dare to try The Gravitron find themselves flattened against the inside wall of the ride as it spins faster and faster. As the ride continues to spin, you have difficulty lifting your hands and feet. Suddenly, the floor drops out from under the riders, as they stay stuck against the wall. You feel as though you must be defying gravity at a dizzying speed, but you won't fall. *Centripetal force* will keep you in place as long as The Gravitron keeps spinning.

When an object turns, it has centripetal force acting on it. This force, which means "center seeking," pulls the object to the center of the turn. This causes objects to turn, follow corners, or travel in a circle as they spin.

Physics is the [illegible] them. An English scientist, Sir Isaac [illegible] 1600's – an object in motion will continue to move in a straight line unless acted on any another force. For instance, if you swing a jump rope over your head, the end of the jump rope will [illegible] the end at a fixed distance from your hand (the center). You can feel the pull of centripetal force along the jump rope. When you let go of the jump rope, [illegible] jump rope will fly off in a straight line.

Designers creating many amusement park rides use their knowledge of [illegible] amusement park [illegible] The platform turns, picking up speed. As you spin, you feel pressure holding you back against the fence. Suddenly, the cage tilts at a crazy 45-degree angle! The riders are held in place by centripetal force. Centripetal force also keeps roller coaster cars on the tracks. These cars are not attached to chains; the curves of the track push against the roller coaster cars, creating centripetal force.

Centripetal force keeps a roller coaster on the tracks.

Fluency and Comprehension Questions on each article

Read 3 times to practice fluency. Color a star each time you read.

1. **What keeps a roller coaster on its tracks? (Circle your answer)**
2. **What does centripetal force mean? (Underline your answer)**
3. **What is the main idea of this passage? How do you know?**

_____

_____

_____

NAME: _____

Easy as 3, 2, 1

3 THINGS I LEARNED ABOUT CENTRIPETAL FORCE FROM THE ARTICLE:

2 WAYS THE TEXT FEATURES HELPED ME READ THE ARTICLE:

1 QUESTION I STILL HAVE ABOUT THE INFORMATION FROM THE ARTICLE:

Teaching Tips and Lexile Levels

Each Force and Motion article includes:

* Fluency practice with three text-dependent questions.
* Text-specific graphic organizer.

A Note From Jen:

Feel free to modify this set to meet the needs of **your** class. Be sure to model the expectations, so students know the quality of work expected. Here are a few tips to use this packet to facilitate repeated readings for specific information:

* Project the article and preview the text together. Look at the title, graphics, captions, and read the directions.
* Students read the article 3 times to themselves or with a partner, if needed.
* The graphic organizer can be used during the 3 fluency readings (add a bit each time), as a small group activity to facilitate discussion of the text, or as an independent activity.
* Students annotate text as they answer questions.
* During group discussions, project the passage for easy sharing of evidence.

Force and Motion Articles Lexile Levels:

Around and Around *L 950*

Pirate Ships and Playground Swings *L 1000*

The Free Fall *L 1010*

These levels were found using the Lexile Analyzer at Lexile.com. Lexile is simply a measurement of readability. Jen Sykes and Hello Mrs Sykes are not associated with Lexile in any way. All passages written by Jen Sykes, who retains all copyrights. These passages are for one classroom use only. Redistribution or electronic sharing prohibited.

3 Informational Texts, written by Jen Sykes

Name: _____ Date: _____

Around and Around

Amusement parks can be fun, especially the rides! Riders who dare to try The Gravitron find themselves flattened against the inside wall of the ride as it spins faster and faster. As the ride continues to spin, you have difficulty lifting your hands and feet. Suddenly, the floor drops out from under the riders, as they stay stuck against the wall. You feel as though you must be defying gravity at a dizzying speed, but you won't fall. *Centripetal force* will keep you in place as long as The Gravitron keeps spinning.

When an object turns, it has centripetal force acting on it. This force, which means "center seeking," pulls the object to the center of the turn. This causes objects to turn, follow corners, or travel in a circle as they spin.

Physics is the study of objects and the forces that act on them. An English scientist, Sir Isaac Newton, discovered a law of physics in the 1600's – an object in motion will continue to move in a straight line unless acted on any another force. For instance, if you swing a jump rope over your head, the end of the jump rope will travel in a circle. The jump rope keeps the end at a fixed distance from your hand (the center). You can feel the pull of centripetal force along the jump rope. When you let go of the jump rope, the centripetal force disappears, so the jump rope will fly off in a straight line.

Designers creating many amusement park rides use their knowledge of the laws of physics. The Round Up amusement park ride looks like a large, circular fence. The platform turns, picking up speed. As you spin, you feel pressure holding you back against the fence. Suddenly, the cage tilts at a crazy 45-degree angle! The riders are held in place by centripetal force. Centripetal force also keeps roller coaster cars on the tracks. These cars are not attached to chains; the curves of the track push against the roller coaster cars, creating centripetal force.

Centripetal force keeps a roller coaster on the tracks.

Read 3 times to practice fluency. Color a star each time you read.

1. What keeps a roller coaster on its tracks? (Circle your answer)
2. What does centripetal force mean? (Underline your answer)
3. What is the main idea of this passage? How do you know?

Name: _____ Date: _____

The Free Fall

Imagine listening to a group of thrill ride designers saying, "Let's invent an amusement park ride that is the same as falling off a building!" Someone must have said that at some point, because free-

e becoming more and more popular! Those designers

wn a lot about physics.

le is a ride where you are lifted to the top of a tower or

trapped to a bungee-jumping harness. Then the ride

t. Powerful braking systems or a net keep you from

nd just before impact.

t idea in physics and free-fall rides is potential energy.

y is stored-up energy, like when you wind up a little wind-

wind the toy, you are creating potential energy. When

toy, the potential energy becomes kinetic energy –

The toy will move until the kinetic

. Then you can wind up the toy

e more potential energy.

ergy is stored on a free-fall ride as

igher and higher. When the ride is

otential energy transforms into

and gravity takes over, pulling the

to earth. When the ride begins

ly tries to stay in place. You feel

g the free fall because you don't

rt except from your seat belts or

s.

A Free Fall ride uses potential energy, also called stored energy.

ctice fluency. Color a star each time you read.

energy are used in a Free Fall ride? (Circle your answer)

el weightless during a free fall? (Underline your answer)

in idea of this passage? How do you know?

Date: _____

rate Ships and Playground Swings

ate ship ride and a playground swing have in common? They

of pendulum. A pendulum is a weight hung from a fixed point

ng freely backward and forward. If you move the pendulum, it

nd forth for quite a while before it stops on its own.

ide at an amusement park is really just a huge pendulum.

motion, the screaming riders swing back and forth again and

one direction, swings back, and then tips up the other

pendulum, each swing gradually goes lower with each pass

swing is a pendulum that you control in a similar way. The rider

(or gets a push) to go as high as they want to go. When you

g, you can coast and enjoy the swing as it gradually slows and

on, an English scientist, made an important discovery more

go. He recognized that a moving object kept moving unless a

and that an object did not move unless a force acted on the

oing. This idea is called inertia.

ride is stationary until a motor sets the ride in motion. The

g stays still until the rider begins pumping their legs or gets a

pendulum hangs still until something moves it. In each case, a

inertia to get it going.

ate ship rides and pendulums swing forever? Air is made up of

hough the particles are small and

irate ship ride, playground swing, and

e with the air particles enough to

down. Meanwhile, the surfaces of the

rubbing together at the pivot point

g friction. Air resistance and friction

hat work together to gradually bring

stop.

A Pirate Ship ride and a swing are both types of pendulums.

ctice fluency. Color a star each time you read.

playground swing in motion? (Circle your answer)

ork together to bring a pendulum to a stop? (Underline your answer)

in idea of this passage? How do you know?