## How Sandy Got Her Spin



## Supplemental Activity Workbook

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## Spin Your Vocabulary Skills

Directions: Vocabulary words from How Sandy Got Her Spin are shown in the Word Bank below. Match each word with the correct definition by writing the letter of the correct word next to its definition.

1. $\qquad$ to judge or think
2. $\qquad$ rising or collecting
3. $\qquad$ strong
4. $\qquad$ a promise
5. $\qquad$ to communicate over the radio, an intercom, or television
6. $\qquad$ a mistake
7. $\qquad$ to defeat
8. $\qquad$ loyalty
9. $\qquad$ surrounding mood
10. $\qquad$ movements or dance steps that fit well with a piece of music
11. $\qquad$ to walk in a line
12. $\qquad$ to appear in view

| A. <br> broadcast | B. <br> guarantee | C. <br> welling | D. <br> allegiance |
| :---: | :---: | :---: | :---: |
| E. <br> choreography | F. <br> vigorous | G. <br> blunder | H. <br> f. |
| d.em | J. | K. |  |
| emerge | atmosphere | overcome |  |

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## Balance These Numbers!

Directions: Samantha, Jose, and Nicholas have math class before it's time for practicing basketball again in P.E. Help them solve the following math problems and write your answers on the lines provided. Use a separate sheet of paper for your work, if necessary.

For questions 1 and 2, simplify.

1. $975 \div 5 \times 2.9$
2. $24 \div 8+3.8$

For questions 3 and 4, evaluate the expression.
3. 7 c

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\text { if c = } 7
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4. $9 q+21$
if $q=3$
$\qquad$

For questions 5-8, solve each equation.
5. $e-13=83$
$e=$ $\qquad$
6. $31=90-f$
7. $12=h-51$
$f=$ $\qquad$
8. $87-g=57$

For
9.

questions 9 and 10, find the perimeter of the figure shown.
This is a regular polygon. $\overline{\mathrm{LZ}}=57 \mathrm{~mm}$.
Perimeter $=$ $\qquad$
10.

This

is a regular polygon. $\mathrm{QH}=\overline{81} \mathrm{mi}$.
Perimeter $=$ $\qquad$

## Basketball Circle Routine

The picture to the right shows you who to pass the ball to at the end of your turn.


## Player 1

Around to the left, (rotate ball around body)
Spin to the right. (Spin yourself around to the right with ball in right hand)
Figure eight makes it tight. (rotate ball in figure eight pattern around both legs) Now take it up,
Stretch to the top. (rotate ball around the head and then bring ball over head) Pass it on, Just don't stop. (pass ball to next player)

Player 2
Dribble it in front, (dribble ball 2 times in front of you)
Take it around your back. (rotate ball behind your back and around your waist) Switch it in your hands
And stay on track. (pass ball quickly from left to right hand, like a hot potato)
Bounce it on the ground, (bounce ball on the ground)
Pass it up high, (lift above head, get ready to pass to next player)
With a cool move (make up a cool move)
To the next guy. (pass ball to player on opposite side)

## Player 3

Around to the left, (rotate ball around body)
Spin to the right. (spin yourself around to the right with ball in right hand)
Figure eight makes it tight. (rotate ball in figure eight pattern around both legs) Now take it up,
Stretch to the top. (rotate ball around the head and then bring ball over head) Keep it moving,
Just don't stop. (pass ball to next player)

## Basketball Circle Routine (Continued)

## Player 4

Toss it up high, (player throws ball up and catches it)
Bounce it down low. (dribble ball low to the ground)
Keep it bouncing; (keep bouncing ball)
Give it a go! (bounce ball until ready to pass to next player)
Now get ready (keep bouncing ball)
To jump real high, (keep bouncing ball)
Shoot it now (player gets ready to jump with ball like shooting a basket)
To the opposite guy. (shoots ball to player on opposite side)

## Player 5

Around to the left, (rotate ball around body)
Spin to the right. (Spin yourself around to the right with ball in right hand)
Figure eight makes it tight. (rotate ball in figure eight pattern around both legs)
Now take it up,
Stretch to the top. (rotate ball around the head and then bring ball over head)
This is cool,
Just don't stop. (pass ball to next player)

## Player 6

Spin the ball around, (circle ball around body)
Don't let it drop. (continue circling)
Catch it in the air with a very cool hop. (catch in air with a jump)
Juggle on your left, (toss into left hand)
And juggle on your right. (toss into right hand)
Bounce it across,
But keep it in sight! (bounce ball on ground to next player)

At the end, the person who started with the ball has the ball again. Pass the ball to your left and start again so everyone can perform a new part!


# Why Can You Spin a Basketball? ...And Other Cool Facts 

Basketball, like many other everyday activities and forms of recreation, can be explained by the laws of physics! This goes for both the game of basketball, as well as tricks preformed by Sandy Spin and other basketball handlers.


## Why does spinning a basketball work?

- Inertia is the effect that causes objects to tend to remain still or keep moving in the same direction they are moving. Inertia is what causes the basketball to keep moving once you have spun it, until outside forces cause it to fall.
- Gravity, which pulls all objects towards the center of the planet, is one of the forces that causes the ball to stop spinning eventually. It pulls the sides of the ball towards the ground.
- Friction is the resistance between objects that are touching. In the case of a spinning basketball, there is friction between your finger and the ball. There is also friction between the air and the ball. These contacts cause the ball to slow down and stop spinning.
- Centrifugal Force causes rotating bodies to move away from the center of rotation. This means if you imagine a straight line going through the center of a spinning basketball, the sides of the basketball will pull as far away as possible from that line, keeping the ball in an upright position. Centrifugal force therefore prevents gravity and friction from acting as quickly as usual on an object.


## Why do basketballs bounce?

Basketballs are filled with air so that when the ball hits the ground, the energy you put into the ball by throwing it towards the ground will rebound and bounce upwards. The higher the air pressure inside the basketball, the higher the ball will bounce. This is because an under-inflated ball will collapse and bend into the ground, which wastes some of the energy that would otherwise cause the ball to bounce.
The surface you try to bounce the ball on is also important. For example, if you bounce the ball on carpet, the carpet will be pressed downwards, which takes away some of the basketball's energy. The ball will not bounce very far! The harder the surface, the better it is for bouncing a basketball.

## Basketball players seem to float?

Pro basketball players seem to float in the air while they are jumping to make a basket. They do not really fall slower than they jumped, but it appears this way to us because they often reach upwards with the ball after they have reached their highest point in the air. They may also be travelling forward through the air, which affects the way we see movement. The time the basketball player takes to go upwards and then stop moving is exactly equal to the time it takes him to fall back to the ground, and he does not pause in mid-air!

## A great way to make baskets!

Basketball players often shoot the ball so that it spins sideways through the air when trying to make a basket. This is not done to cause the ball's path to curve or affect air resistance, as in other sports like baseball. Basketballs move too slowly for those things to occur. Instead, spinning the ball in a certain direction through the air causes the ball to bounce into the net when it hits the rim. When the spinning ball hits something, it will immediately reverse its spinning direction. This will pop it into the net instead of out of the net, when done correctly!

Classroom Demonstration: Your teacher will show you what happens when you drop the mini basketball onto first a carpeted floor, then a pavement or cement surface outside. Here is how the experiment will work:
You will need: 1 yardstick or other measuring stick, 1 mini basketball
Directions: Teacher will hold the yardstick upright and drop the mini basketball from a height equal to the top of the yardstick. Students will observe how high the ball bounces back up. This demonstration will be shown first on a carpeted surface and then on pavement or cement.

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## Facing Your Fears

In the story, How Sandy Got Her Spin, Samantha is very shy and is scared to perform in front of people the way Sandy Spin did at their school assembly. Samantha wishes she was brave enough to stand up in front of an audience. After some advice from Sandy and some encouragement from her teacher, she demonstrates some cool basketball skills for her classmates! This doesn't mean she stopped being afraid, but she showed courage. As the famous quote goes, "Courage is not the absence of fear, but the triumph over it. The brave man is not he who does not feel afraid, but he who conquers that fear." (Nelson Mandela)


Directions: Write an essay on the lines below telling about a time you were afraid of trying something new, but overcame your fears to do it anyway. Explain how you felt, why you were scared, and what helped you be courageous and get past your fear. Remember, even if you made mistakes it still counts as being brave!
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## Size Up the Fun

Directions: Read the questions below about the story, How Sandy Got Her Spin, and answer them on the lines provided.

1. What tricks does Sandy do that finally get Nicholas' attention and make him think that, maybe, girls can be good at basketball, too?
2. How many basketballs can Sandy spin at once? Which parts of her body does she balance the balls on?
3. Sandy Spin tells the kids that she always remembers the following statement: "I have confidence in me, because I have practiced to be the best I can be." How does can you apply this idea to your own life? Have you ever reminded yourself of how much you had prepared for something in order to help you feel braver?
4. Which character in the story is most like you: Jose, Samantha, or Nicholas? Choose based on personality and not based on whether the character is a boy or girl. Explain how you are similar and different from the character you choose.
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5. Why do you think the students are so inspired by Sandy Spin's performance? What lessons does she teach the kids? Have you or other students at your school ever been very impressed by a guest who put on an assembly at your school? If so, explain what happened.
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$\qquad$
$\qquad$
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## Get in Shape!

Directions: Below are a few exercises that will help "get you in shape" to play the game of basketball!

Quick Jumps - Start in a standing position with feet together next to a line on the floor. Quickly jump from side to side over the line, keeping your feet together.

Side Stretch - Start in a standing position with your arms crossed above your head. Bend sideways to the right and then to the left.

Side Slide - Start in a standing position (feet farther than shoulder width apart, knees bent slightly). Begin by slide stepping back and forth, making sure the feet stay within 12 " of each other. Arms are slightly bent at each elbow, hands are about as high as the chest, extended outward away from the body.

Sit Up - Sit with knees bent and arms crossed over the chest. Slowly lower back to the floor, then raise back up. Repeat.

Hip Flexor - Stand with one foot in front of the other, toes pointed forward. Bend the front knee $90^{\circ}$ and extend the rear leg back, lowering hips toward the floor. HOLD, and the repeat with other leg.

Bobsled - Start in the push up position. Rotate your feet forward and back quickly while your hands remain on the floor.

Imaginary Jump Rope - Pretend to jump rope. Arms are on the side of the body and feet are a little closer than shoulder width apart.

Jumping Jacks - Start in a standing position. Begin by jumping to a position with the legs spread wide and the hands touching overhead and then returning to a position with the feet together and the arms at the sides.

Triceps Stretch - Start in a standing position. Lift one arm overhead, bending it at the elbow. Grasp the elbow with the opposite hand and pull slightly. Hold. Switch arms and repeat on the other side.

Jump to the Sky - Start in the standing position with knees slightly bent, feet shoulder width apart, and arms are straight and behind the body. Begin activity by accelerating the body upward, while simultaneously reaching for the sky with both hands.

## Practice Your Skills

Directions: Everyone can have fun playing basketball! Below are ten basketball activities that will help improve your game, and are a whole lot of fun!

Pinch Ball - Transfer the ball quickly between fingers ("hot potato").


Ball Slaps - Transfer the ball quickly between hands, slapping the ball into each hand.

Around Body, Waist, Head - Start in the standing position, with feet together. Rotate ball once around the knees, once around the waist and once around the head without hesitating. For a challenge, reverse the direction.

Butterfly - Lay on your back, with legs lifted in the air. Rotate the basketball in a figure 8 pattern around your legs. For a challenge, reverse the direction.

Blind Back Catch - Start in the standing position, holding the basketball with both hands at the curve of the neck area in the back of the body. Release the basketball and quickly move hands down and behind the back, catching the basketball behind the back before it hits the floor. For a challenge, clap in front of the body before catching the basketball behind the back.

Sit Up Dribbling - Start in a sit-up position with knees bent and feet flat on the floor. Begin dribbling the basketball with your dominant hand low while simultaneously doing sit-ups. Repeat with other hand.

Clap N' Catch - Start in a standing position. Throw ball slightly above head. When ball is in the air, clap hands together twice and catch the ball.

Control Dribble - Start in the standing position. Left foot forward, bend at the knees, protect the ball with the left hand, and keep your head up. Begin by dribbling basketball at knee height with your right hand by the right foot. Repeat with left hand - right foot forward, protect the ball with the right hand and begin dribbling the basketball knee height with your left hand by your left foot.

Crossover Dribble - Feet are shoulder width apart, knees bent. Dribble one hard dribble from the right hand to the left hand and back again without hesitation in front of the body.

Piano Key Dribble - Start by sitting down, legs straight, knees together, ball is in the dominant hand. Begin dribbling with one finger at a time (including the thumb). Repeat with non-dominant hand.

# How Sandy Got Her Spin <br> Answer Key For Teacher Use Only 

## Teacher Instructions for Basketball Circle Routine

The Basketball Circle Routine is a rhyming poem along with directions for a routine students can practice with a mini basketball or other small bouncing ball. The activity may take place either outside on a cement or blacktop surface, or in the classroom if there is space. First, have students practice reading the rhyme aloud in the classroom so they may become familiar with the words and actions they will be performing. Since this is a Reader's Theater activity, encourage students to read with expression and excitement, both during preparation and later practice.

Next, divide the class into groups of six and instruct each group to stand and form a circle. Take note of the player order diagram on the next page. A student's position in the circle will determine which part he or she will read and perform. Using the diagram, explain to students the order in which they will pass the ball, and which parts each person will perform.

Have the students begin by practicing passing the ball in the correct order. When they are comfortable with this, have them simply read the rhyme aloud in an expressive chant or rap style and pass the ball to the next person at the end of their part.

Finally, students are ready to begin acting out the routine while reading their parts. At first, students will need a script visible on the ground in front of them to help with remembering their lines, as well as the ball routine. Later, students will easily have memorized the words and actions and can perform the routine without scripts. The goal of this exercise is for students to perform the routine and rhyme fluidly and confidently!

Spin Your
Vocabulary Skills

1. I
2. C
3. F
4. B
5. A
6. G
7. L
8. D
9. K
10. E
11. H
12. J

Balance These Numbers!

1. 565.5
2. 6.8
3. 49
4. 48
5. 96
6. 59
7. 63
8. 30
9. 342 mm .
10. 243 mi .


## Size Up the Fun

1. Nicholas started to pay attention after seeing Sandy spinning a basketball around her body, spinning two basketballs, and dribbling 3 basketballs at once.
2. Sandy spins eight basketballs at once: 2 on her toes, two on her knees, two on her hips, and two on her index fingers.
3. Answers may vary.
4. Answers may vary.
5. (Sample Answer): Students are inspired by Sandy Spin because she is so good at what she does, yet she explains how she wasn't always that good and she is still sometimes scared! She tells the kids that getting better just takes practice, so the kids feel they could learn something difficult, too.


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