Bowling isn’t JUST about fun; it’s also very educational.

In this section, you will find fun activities centered around bowling to reinforce various subjects including math, language arts, nutrition, art, spelling and more.

These educational activities are again separated by grades K-2, 3-5 and 6-8. Look for the symbols designating recommended grade levels and refer to the coded matrix on the following page to quickly identify which activities would be most appropriate for the age level you are teaching plus what subject(s) is emphasized.

K-2  3-5  6-8

At the end of the section (beginning on page 57) you will find an answer key for many of the activities.
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Color by Number

Using the Color Key below, color the picture.

Color Key

1 = blue
2 = red
3 = yellow

4 = green
5 = brown
6 = purple
Connect the Dots

Connect the dots to reveal the hidden picture!
Connect the Dots II

Connect the dots to reveal the hidden picture!
Connect the Dots III

Connect the dots to reveal the hidden picture!
Crazy Maze

Can you help the ball find its way to the pin?
Criss-Cross Words

Can you make the words fit into the squares?

WORD LIST

Open
Bowl
Spare
Return
Strike
Lane
Error
Miss
Follow That Line!

Follow the line that will take the ball to the pin!
Hidden Words

Can you find the hidden words? Remember to look forwards, backwards, up, down, and diagonally.

WORD LIST

Bowl
Error
Hook
Lane
Miss
Open
Return
Spare
Strike
How Many?

Draw a line from the number to the picture that contains the same amount.

Five

Three

Two

Ten

Seven
Match That Pin

Only 2 pins below are identical. Can you find them? Circle the two that are alike.
Circle the Action Verb(s) in each sentence.

1. Tommy and Alicia went bowling.
2. Allison bought some pizza at the snack bar.
3. Sliding past the foul line, Caitlyn almost slipped on the oil.
4. LeRoy asked his mom if they were going bowling today.
5. Kelly sat and waited patiently for her turn to bowl.
6. Jessica came in first place in the tournament.
7. Michael bowled three strikes in a row—a turkey!
8. “Nice shot!” exclaimed Maricia.
9. Trevor got a spare in the first frame.
10. Bryan said, “Don’t cross the foul line.”
11. The ball glided down the lane—right into the channel!
12. The students told the lady at the control desk their shoe sizes.
13. Suzie found the perfect sized ball.
14. Can you guess the perfect score in bowling?
15. Tony beat Marcus in the tenth frame.
Around the World

Did you know that there are more than 10,833 bowling centers around the world in over 100 countries? More than 6,000 of them are located in the United States.

Using the Internet, locate a bowling center in another state and answer the following questions:

1. In which city is that bowling center located? ________________
2. How many lanes does that bowling center have? __________
3. How far away is the bowling center from where you live? _______ Miles
4. If you drove to that center, traveling 60 miles per hour, how many hours would it take you to get there? (Round up to the next highest hour. You might get stuck in traffic or need to stop and eat a snack.) _______

Now locate a bowling center in a foreign country.

1. In which country is that bowling center located?__________________________
2. How many lanes does that bowling center have?_________________________
3. How far away is the bowling center from where you live? _______ miles
4. In what ways is that bowling center the same as the one you found in the United States?_________________________________________________________
5. In what ways is it different?____________________________________________
6. How would you travel to get to that center?______________________________
7. How long would it take you to get there?________________________________

Using a map of your city, answer the following questions:

1. Go to www.bowl.com and click on Find a Center.
2. Locate all of the bowling centers in your city.
3. Draw a bowling ball on the map to mark where each bowling center in your city is located.
4. Which bowling center is closest to your home?____________________________
Bowling Ballads

Ballad is another name for poem. By definition, a poem is a piece of literature written in meter. A poet is someone who writes poetry. Can you think of any famous poets?

There are many different types of poems. Two types covered in this lesson are haiku and limericks.

A haiku is a 3-lined poem with the following pattern: the first line contains 5 syllables, the second line contains 7 syllables, and the third line contains 5 syllables. Here are a couple of examples:

Bowling is a fun
Activity for many
Kids of all ages.

A ball with three holes,
Ten pins I must knock down.
A strike is what I seek!

Limericks are humorous, five-lined poems. The first, second, and fifth lines rhyme with each other, and the third and fourth lines rhyme with each other. In addition to rhyming, limericks contain a rhythm. Here is a fun limerick about bowling:

There once was a girl named Moore
And bowling was a sport she adored.
She once scored a strike
And the ball she did spike
Which knocked a big hole in the floor!

The rhythm sounds like this:
da DA da da DA da DA
da DA da da DA da DA
da DA da da DA

da DA da da DA da DA

Now, you try it!

1. On a blank sheet of paper, write a haiku and limerick poem about bowling.

2. Go to the Internet and search for different types of poems. Choose your favorite type and write a poem about bowling.
Bowling Center Tour

The size of a bowling center is defined by the number of lanes. While the average center size is 24 lanes, there are centers ranging from just two lanes to over 100 lanes!

When you walk into a bowling center, one of the first things you’ll see is the customer service desk, also known as the control desk or control center. The control desk is the place where you will be assigned a lane, get your bowling shoes and pay for your games. Have you ever wondered why special bowling shoes are required? Bowling shoes have a unique leather sole that allows the bowler to “slide” on the wooden floor when bowling.

After you have received your shoes and lane assignment, you’ll need to pick out a ball. Bowling balls are really colorful and range in weight from 6 to 16 pounds. How do you know which ball is right for you? There are two things to consider: First, the weight of the ball should be about 10% of your body’s weight. So if you weigh 80 pounds, you should pick an 8 pound ball. Second, the finger holes should fit. To check for proper fit, put your thumb in the thumb hole and extend your middle two fingers out over the finger holes. The middle of the finger holes should line up with middle of your knuckles. Make sure that your thumb fits snugly, but not tight.

The concourse area is where spectators sit to watch the bowlers. Most centers allow food and beverage in this area. The settee area is the area where the bowlers sit to wait until it is their turn to bowl.

The bowling lane is normally 41 inches wide and 60 feet long from the foul line to the pins. On the lane, you will see locator dots and target arrows to help bowlers aim their shots. Did you know that bowling lanes are oiled daily? This helps protect them and reduce the friction caused by the ball rolling down the lane. The approach area is the portion of the lane behind the foul line. This is where the bowler lines up to deliver the ball. The approach must be at least 15 feet long. Along each side of the lane is a channel. A channel is there to catch a ball that rolls off the lane. To prevent your ball from going into the channel, and increase your score, most bowling centers offer bumper guards. Bumper guards can really help while you’re perfecting your game! The last three feet of the lane is known as the pin deck.

The ten pins used in bowling are arranged in a triangular formation, twelve inches apart. The front pin is called the head or Number 1 pin. Once a ball has been delivered down the lane, it is returned to the bowler by an automatic ball return. A pinsetter clears the pins that are knocked down after each delivery and resets all 10 pins at the end of the frame.
Check what you learned!

1. If you weigh 105 pounds, you should choose a ball that weight ______ pounds.
2. What device prevents your ball from going into the channel? ________________
3. The ___________________ returns the ball to the bowler.
4. Bowlers wait their turn to bowl in the __________area.
5. Why are special shoes required? _____________________________
6. How is the size of a bowling center determined? _________________
7. What is the name of the machine that resets pins? ________________
8. Go to the bowling center. Choose a topic and write an essay: a day in the life of a pin (or a bowling ball), or why it would be fun to work in a bowling center.
Bowling Maze

Help the ball find its way to the pin!
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<th>Name ___________________________</th>
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<tbody>
<tr>
<td>1 2 3 4 5 6 7 8 9 10</td>
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<td>1 2 3 4 5 6 7 8 9 10</td>
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# Bowling Scorecards

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Color by Number

Using the Color Key below, and by solving some equations, color the picture.

Color Key

1 = blue
2 = red
3 = yellow
4 = green
5 = brown
6 = purple

Equations:

1 = \sqrt{36}
2 = \sqrt{16}
3 = 3 \times 5 - 10
4 = 4 - 3
5 = 12 - 8
6 = 1 \times 2

Color Key:

1 = blue
2 = red
3 = yellow
4 = green
5 = brown
6 = purple
Connect the Dots

Connect the dots to reveal the hidden picture!
Daily Health Journal

Date:_____________________

Daily goal:__________________________________________________________

Breakfast:___________________________________________________________

Snack:______________________________________________________________

Lunch:_______________________________________________________________

Snack:______________________________________________________________

Dinner:_______________________________________________________________

Water consumed:______________ ounces

Type of exercise:_____________________________________________________

Duration:____________________________________________________________
Fun with Numbers

Rewrite the underlined word(s) as a numeral.

In 2006-07, there were eighty-three thousand, seven hundred and thirty-one leagues in the United States. (USBC: bowl.com)

Answer:________________________

There are ten thousand, eight hundred and thirty-three bowling centers worldwide.

Answer:________________________

Today, more than sixty-six million people bowl each year in the United States.

Answer:________________________

There are twenty-one million youth bowlers aged seventeen and younger.

Answers:________________________ __________________________

Each year, ten million children celebrate their birthdays in a bowling center.  

Answer:________________________

There are bowling centers in more than one hundred countries.

Answer:________________________

Over five million senior citizens (people aged fifty-five and over) go bowling.  

Answers:________________________ __________________________

In 2006-2007, there were two million, six hundred eight thousand, two hundred and seventy-nine sanctioned league bowlers.

Answer:________________________

In nineteen ninety-five, the National Bowling Stadium was constructed in Reno, Nevada.

Answer:________________________
Health Tips

In order to be a great bowler, it’s important to keep in tip-top shape. Getting healthy isn’t as hard as it may seem. Here are some tips to make it easy for you:

1. **Drink up!** Your body is made up of 60% water. In order to function properly, every part of your body needs water. Kids should drink 50% of their body weight in ounces of water each day. For example, if you weigh 70 pounds, you should drink 35 ounces of water. To figure out the amount of water you need each day, record your weight here:____. Now divide that number by 2. The amount of water you should drink daily is ____ounces. (Remember that 8 ounces = 1 cup).

2. **Get some sleep!** Ever notice that when you’re sick you just want to sleep? That’s because your body heals itself twice as fast when you’re sleeping as when you’re awake. To be in tip-top shape, your body needs at least 8 hours of sleep each night.

3. **Get regular exercise!** Bones and muscles stay strong by getting a workout! Bowling is a great form of weight-bearing exercise. Did you know that...
   - The average adult bowler burns 240 calories per hour?
   - Bowlers use 134 muscles during the basic four-step approach?
   - 3 games of bowling = 1 mile of walking?

   In addition to weight-bearing exercise (such as bowling), you should stretch regularly to keep your muscles limber and give your heart a workout by getting some cardiovascular exercise. Try walking, running, skating, riding your bike, or dancing!

4. **You are what you eat!** Your body is an amazing machine and in order to function properly, it needs the proper fuel—just like a car needs the proper fuel to run properly. You wouldn’t put watered-down gasoline in a race car and expect it to win the race, would you? Eating the best foods is just like putting the right gas in your car. Here are some simple ways to get started:
   - **Replace sodas and sugary fruit juices with water.** Remember, your body needs a lot of water each day to stay hydrated. Sodas and fruit juices just don’t cut it. Did you know that one cup of fruit juice can contain 7 teaspoons of sugar? And a 12-ounce can of orange soda has 12 teaspoons of sugar.
   - **Replace chips and candy with fruits, vegetables and nuts.** Sounds boring doesn’t it? Actually, it can be quite fun.
     - Cutting fruits and vegetables into fun shapes.
     - Find as many different colors as possible. The darker the color, the more nutritious the food.
     - Try new things and swap with your buddies. Have each person bring a different type of fruit or vegetable snack and then pass them around so everyone can try something new. Have a contest to see who will try the most new things or who tries the most different colors of food!
Health Tips

[continued]

• **Eat lots of whole grains.** Whole grains, also known as complex carbohydrates, are what give your body energy (like the gasoline in a car)! This includes whole wheat bread, brown rice and whole grain pasta. Experiment with new things you might not have tried before, like barley, quinoa (pronounced “keen-wa”) or millet. You never know what you’ll like until you try it!

• **Eat more beans.** No, you don’t have to eat lima beans if you really don’t like them! Try black-eyed peas, pinto beans, or black beans instead. Or, if you’re feeling adventurous, try things like adzuki beans, lentils, or garbanzo beans (also known as chickpeas).

• **Eat lots of green, leafy vegetables.** Popeye really did get stronger by eating spinach! Green, leafy vegetables are high in antioxidants, which fight off diseases. How cool is that? Try spinach, mixed salad greens, kale, or mustard greens. To make it easier, try putting them in a wrap sandwich, in a salad, or in soup.

**LUNCH TIPS**

An easy way to start eating healthier is to pack your own lunch. Not only will it be healthier than the school cafeteria, it’ll taste a lot better! Below are some menu ideas for packing your lunch. In addition, there’s a daily journal on the next page. Each day, write down the food you eat, the water your drink, and the exercise you get. It’s an easy way to start making positive changes!

**Frito Bandito**
- Bean chili
- Baked tortilla chips
- Dairy-free cheese

Put the chili and cheese in a thermos to keep it hot until lunch. Add the tortilla chips on top.

**Pocket Power**
- Sandwich made with almond or natural peanut butter (one that does not contain partially hydrogenated vegetable oil!) and honey
- Steamed carrots or asparagus
- Sliced apples

**Sea and Cee**
- Tuna sandwich
- Cucumber slices
- Sliced melon (cantaloupe, honeydew)

**Bagel Deluxe**
- Half of a bagel with natural peanut butter (no hydrogenated oils), and a face made of raisin eyes, a cashew nose, and an apple smile
- Steamed potatoes and herbs
- Applesauce
Heavy Balls!

List the bowling balls in the order of their weights, starting with the heaviest.

Jake’s bowling ball is heavier than Janna’s.

Chris’s ball weighs more than Brandy’s but less than Peter’s.

Brandy’s ball weighs more than Janna’s ball.

Peter’s ball weighs less than Jake’s ball.

The heaviest ball belongs to: ________________.
The next heaviest ball belongs to: ________________.
The next heaviest ball belongs to: ________________.
The next heaviest ball belongs to: ________________.
The lightest ball belongs to: ________________.
Hidden Words

How many different words can you make out of the letters in BOWLING?

(We’ll give you a couple to get started.)

1. BOW
2. BOWL
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Bowler’s Ed In-School Bowling Teacher’s Curriculum: Academics
A game of bowling consists of ten frames. Two ball deliveries are allowed in each frame except when a bowler scores a strike. A strike occurs when all ten pins are knocked down in the first delivery. On the scorecard, a strike is marked with an “X.” If all pins are knocked down with two deliveries in the frame, it is called a spare. A spare is marked with a “/” on the scorecard.

**Scoring a frame:** The number of pins knocked down with the first ball is placed in the upper left corner of the box. The number of pins knocked down with the second ball is placed in the upper right box. The total of the numbers is placed at the bottom of the box. For example, if the bowler knocks down 2 pins with the first ball and 7 pins with the second ball (total of 9 pins knocked down), the scorecard would be marked like this:

```
1
2 7
9
```

**Frame 1:**  $2 + 7 = 9$

**Scoring a Spare:** For a spare, you get a score of 10 plus the score of the total pins knocked down in the next delivery. In the example below, the bowler scored a spare in the second frame. The bowler receives a score of ten for that frame plus seven, which is the number of pins knocked down by the first ball in the third frame. The scorecard is marked like this:

```
1 2 3
2 7 8 / 7 1
9 26 34
```

**Frame 2:** 10 points for the spare + 7 for the next ball = 17.

Add this to 9 from frame 1 to equal 26.

**Frame 3:** 26 +7 + 1 = 34

**Scoring a Strike:** For a strike, you get a score of 10 plus the score of the total pins knocked down in the next two deliveries. In the example below, the bowler scored a strike in the fourth frame. The bowler receives a score of ten for that frame plus nine, which is the total number of pins knocked down in the next two deliveries (frame 5). The scorecard is marked like this:

```
1 2 3 4 5
2 7 8 / 7 1 X 6 3
9 26 34 53 62
```

**Frame 4:** 10 points for the strike + 6 + 3 for the next two balls = 19.

Add this to 34 from frame 3 to equal 53.

**Frame 5:** 53 + 6 + 3 = 62

**The tenth frame:** The bowler gets two deliveries on the tenth frame unless a strike or spare is scored. If a strike or spare is scored, the bowler takes three deliveries. All three deliveries are added to the bowler’s final score.

**Zero:** If no pins are knocked down, the scorecard is marked with a line “—”.

**Foul line:** If the bowler crosses the foul line, the delivery counts, but the player receives a score of zero for that delivery.
## Keeping Score

**Now, you try it!** Using the blank scorecard below, see if you can correctly keep score for Bowler Ed.

| Frame 1:  | Ed knocks down 2 pins on the first delivery and 7 pins on the second delivery. |
| Frame 2:  | Ed knocks down 8 pins on the first delivery and scores a SPARE on the second delivery. |
| Frame 3:  | Ed knocks down 7 pins on the first delivery and 1 pin on the second delivery. |
| Frame 4:  | Ed scores a STRIKE! |
| Frame 5:  | Ed knocks down 6 pins on the first delivery and 3 pins on the second delivery. |
| Frame 6:  | Ed scores a STRIKE! |
| Frame 7:  | Ed knocks down 5 pins on the first delivery and scores a SPARE on the second delivery. |
| Frame 8:  | Ed knocks down 8 pins on the first delivery and 1 pin on the second delivery. |
| Frame 9:  | Ed knocks down 6 pins on the first delivery and 2 pins on the second delivery. |
| Frame 10: | Ed knocks down 7 pins on the first delivery and scores a SPARE on the second delivery. On the third delivery, he knocks down 9 pins. |

Spare = /  
Strike = X

---

**More practice!** This time, Bowler Ed scored a STRIKE in all ten frames!

Spare = /  
Strike = X

---

*Bowler’s Ed In-School Bowling Teacher’s Curriculum: Academics*
More Scoring Fun!

Mark your answers on the score sheet below:

| Frame 1: Ed knocks down 3 pins on the first delivery and 7 pins on the second delivery. |
| Frame 2: Ed knocks down 8 pins on the first delivery and 1 pin on the second delivery. |
| Frame 3: Ed scores a STRIKE! |
| Frame 4: Ed scores a STRIKE! |
| Frame 5: Ed knocks down 4 pins on the first delivery and 5 pins on the second delivery. |
| Frame 6: Ed scores another STRIKE! He’s really on a roll! |
| Frame 7: Ed knocks down 5 pins on the first delivery and scores a SPARE on the second delivery. |
| Frame 8: Ed knocks down 6 pins on the first delivery and 4 pins on the second delivery. |
| Frame 9: Ed knocks down 6 pins on the first delivery and 2 pins on the second delivery. |
| Frame 10: Ed knocks down 7 pins on the first delivery and 2 pins on the second delivery. BONUS QUESTION: Does he get to roll the ball a 3rd time on the 10th frame? |

Spare = / Strike = 

1 2 3 4 5 6 7 8 9 10
Letter Change

Change each letter to the one that appears BEFORE it in the alphabet to solve the puzzle.

```
C  P  X  M  J  O  H
```

```
J  T
```

```
F  Y  F  S  D  J  T  F
```

Change each letter to the one that appears BEFORE it in the alphabet to solve the puzzle.
Number Search

You’ve probably done a word search before, but have you ever done a number search? Find the numbers listed below and circle them. Remember to look across, down, diagonally, forwards and backwards. Can you find all 10 number patterns?

```
 2 1 9 9 3 8
 2 1 8 3 0 2
 4 5 9 1 8 4
 9 7 6 5 0 0
 5 0 5 9 0 8
 5 9 2 0 4 0
```

<table>
<thead>
<tr>
<th>080428</th>
<th>25694</th>
<th>0803</th>
<th>9204</th>
</tr>
</thead>
<tbody>
<tr>
<td>2199</td>
<td>812</td>
<td>4591</td>
<td>9765</td>
</tr>
<tr>
<td>955</td>
<td>9652</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Congratulations! Now that you have found all 10 hidden numbers, read the numbers that are NOT circled from top to bottom and from left to right to answer to the bowling question at the bottom of the page.

The perfect score in bowling is ____________.
1. Pretend you own a bowling center. Using PowerPoint, design a one-page flyer advertising kids’ birthday parties at your bowling center. Be sure to include:
   - The name, address, and phone number of your bowling center
   - Information about birthday parties
   - The cost of birthday parties
   - What is included in the cost

2. Write a letter persuading someone to take you bowling.

3. Write a narrative essay entitled, “A Day in the Life of a Bowling Ball.”

4. Show your work! Write your name, city, state, and age on each of your assignments and fax them to the Bowling Proprietors’ Association of America (BPAA) at 1-817-633-2940. BPAA will post selected essays and flyers on their website, www.bowlersed.com for other kids to see!
Scrambled Up

Match the letters to the numbers and write the secret message!

1 = a  
2 = b  
3 = c  
4 = d  
5 = e  
6 = f  
7 = g  
8 = h  
9 = i  
10 = j  
11 = k  
12 = l  
13 = m  
14 = n  
15 = o  
16 = p  
17 = q  
18 = r  
19 = s  
20 = t  
21 = u  
22 = v  
23 = w  
24 = x  
25 = y  
26 = z

2   15   23   12   9   14   7

9   19   6   21   14

6   15   18   20   8   5

23   8   15   12   5

6   1   13   9   12   25

!
Unscramble the words to reveal popular bowling terms.

**Scrambled Up II**

- giwolbn lalb ______
- eirkts______
- preas______
- netnip ______
- nanehlsc________
- louf ienl____  ______
- roachpap_______
- yevilred__________
Solve the puzzle by answering all of the questions. The shaded squares reveal the secret word.

<table>
<thead>
<tr>
<th>Nickname for Abraham Lincoln</th>
</tr>
</thead>
<tbody>
<tr>
<td>Snap, Crackle, ____________</td>
</tr>
<tr>
<td>This bird gives a hoot!</td>
</tr>
<tr>
<td>Not new</td>
</tr>
<tr>
<td>The seed in an avocado or cherry</td>
</tr>
<tr>
<td>It’s no fun if this shows up at your picnic!</td>
</tr>
<tr>
<td>You’re 10 years old; that is your ____</td>
</tr>
</tbody>
</table>

The secret word is ________________________.
NOTE TO TEACHER: Print this page and the following page front-to-back.

Study the picture below for 1 minute. Then, turn the paper over and answer the questions on the reverse.
Test Your Memory

After studying the picture on the reverse for 1 minute, check off all the things you remember seeing. Caution: There are 5 items listed below that are NOT in the picture!

☐ Rudy the pig
☐ Pizza
☐ 2 pairs of glasses
☐ Bowling pins
☐ A baseball
☐ Bowling balls
☐ Bowling lanes
☐ Sandwich
☐ French fries
☐ Scoring computer
☐ Bowling shirts
☐ A sign that says “Bowl”
☐ Dale
☐ Bowling shoes
☐ A sign that says “Bowl here”
☐ An elephant
NOTE TO TEACHER: Print this page and the following page front-to-back.

Study the picture below for 1 minute. Then, turn the paper over and answer the questions on the reverse.
Test Your Memory II

After studying the picture on the reverse for 1 minute, answer these questions:

How many bowling balls are in the picture? _______

What is Sport eating? _________________________

What word appears above the bowling lanes? ___________

What is the pig's name? _________________________

How many animals wear glasses? ___________

Who is on the lane about to release the ball? ___________
What’s Your Score?

To complete this worksheet, you’ll need your score from two bowling games.

1. Find the mean for each game and write it below.
   
   Game #1  
   ________  
   Game #2  
   ________  

2. Find the median for each game and write it below.
   
   Game #1  
   ________  
   Game #2  
   ________  

3. Find the mode for each game and write it below.
   
   Game #1  
   ________  
   Game #2  
   ________  

4. Write the range for each game and write it below.
   
   Game #1  
   ________  
   Game #2  
   ________  

5. Draw a histogram below representing your score from both games.
   
   Game #1  
   ________  
   Game #2  
   ________  
Word Search

Can you find the hidden words? Remember to look in all directions!

Approach  Inside  Quick Eight
Bowling Center  Jason Couch  Return
Channels  Kegler  Strike
Delivery  Lane  Target Arrows
Error  Miss  Under
Foul Line  Norm Duke  Wood
Gutter Ball  Open  YABA
Hook  Pin Deck  Zero in
**Bowling A-Z Criss-Cross**

Below are bowling vocabulary words using the letters A-Z. Use these vocabulary words to solve the criss-cross puzzle on the next page.

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approach</td>
<td>The part of the lane from the very back of the ball return area to the foul line. Most approaches are 16 feet long.</td>
</tr>
<tr>
<td>Bowling Center</td>
<td>The public location where bowling takes place.</td>
</tr>
<tr>
<td>Channels</td>
<td>U-shaped tracks, also known as gutters, that run down both sides of the lane. Used for catching a ball that rolls off the lane before hitting the pins.</td>
</tr>
<tr>
<td>Delivery</td>
<td>Preparation + release + follow through. Each bowler gets two deliveries per frame, unless a strike is scored.</td>
</tr>
<tr>
<td>Error</td>
<td>A miss.</td>
</tr>
<tr>
<td>Foul Line</td>
<td>A line that designates the end of the approach and the beginning of the bowling portion of the lane. Bowlers are required to stay behind the foul line.</td>
</tr>
<tr>
<td>Gutter ball</td>
<td>A ball that goes into the gutter, or channel.</td>
</tr>
<tr>
<td>Hook</td>
<td>A ball that breaks to the left (for right-handers) and to the right (for left-handers).</td>
</tr>
<tr>
<td>Inside</td>
<td>A starting point near the center of the lane, usually referring to the point of release.</td>
</tr>
<tr>
<td>Jason Couch</td>
<td>A professional PBA bowler who was awarded PBA Rookie of the Year in 1992.</td>
</tr>
<tr>
<td>Kegler</td>
<td>Synonym for bowler.</td>
</tr>
<tr>
<td>Lane</td>
<td>Playing surface. The lane is 42 inches wide and nearly 63 feet long.</td>
</tr>
<tr>
<td>Miss</td>
<td>A missed spare.</td>
</tr>
<tr>
<td>Norm Duke</td>
<td>A professional PBA bowler. Norm was the youngest person to win the PBA Tour Title in 1983; he was just under 19 years old.</td>
</tr>
<tr>
<td>Open</td>
<td>A frame that leaves pins standing after both balls have been delivered.</td>
</tr>
<tr>
<td>Pin deck</td>
<td>The place at the end of the bowling lane where the pins stand in a triangle formation.</td>
</tr>
<tr>
<td>Quick eight</td>
<td>A good pocket hit which leaves standing the 4-7 pins for right-handers and the 6-10 pins for left-handers.</td>
</tr>
<tr>
<td>Return</td>
<td>The track on which balls roll from the pit to the ball rack.</td>
</tr>
<tr>
<td>Strike</td>
<td>Knocking down all 10 pins on the first delivery of the frame.</td>
</tr>
<tr>
<td>Target arrows</td>
<td>Seven arrows, located 15-17 feet from the foul line, used for lining up an accurate delivery.</td>
</tr>
<tr>
<td>Under</td>
<td>A professional bowling score below 200.</td>
</tr>
<tr>
<td>Venting</td>
<td>Drilling a small hole (not a finger hole) to relieve suction on the thumb hole.</td>
</tr>
<tr>
<td>Wood</td>
<td>In scoring, the number of pins knocked down.</td>
</tr>
<tr>
<td>X</td>
<td>The symbol for a strike</td>
</tr>
<tr>
<td>YABA</td>
<td>Young American Bowling Alliance; a non-profit organization for young bowlers. The YABA merged with the USBC (United States Bowling Congress) in 2006.</td>
</tr>
<tr>
<td>Zero in</td>
<td>Find the right strike spot on a lane.</td>
</tr>
</tbody>
</table>
Bowling A-Z Criss-Cross

[continued]

Across
2 Triangular formation at end of lane (2 words)
7 Line at beginning of lane (2 words)
10 A miss
11 PBA 1992 Rookie of the Year (2 words)
12 Good pocket hit leaving favorable pins standing (2 words)
15 Number of pins knocked down
16 Bowler (synonym)
18 Professional bowling score below 200
19 Starting point near center of lane
22 Preparation + Release + Follow through
23 1983 PBA Tour title winner; youngest ever (2 words)

Down
1 Public location where you can bowl (2 words)
3 U-shaped tracks, aka gutters, on both sides of lane
4 Seven arrows used for lining up delivery (2 words)
5 Part of lane from back of ball return to foul line
6 Find the right strike spot on a lane (2 words)
8 A ball that break left or right
9 Drilling a small hole to relieve suction on the thumb hole
13 A ball that goes into the gutter or channel (2 words)
14 The track on which balls rolls from the pit to the ball rack
17 Playing surface
21 Knocking down all 10 pins on the first delivery
24 A frame that leaves pins standing after both balls have been delivered
25 A missed spare
The sport of bowling can be traced back to articles found in the tomb of an Egyptian child buried in 5200 B.C. The primitive equipment included nine pieces of stone at which a stone “ball” was rolled, the ball having to first roll through an archway made of three pieces of marble.

Bowling at pins is believed to have originated in ancient Germany in the early 17th century. At that time it was not a sport but a religious ceremony.

The first indoor bowling lanes were used in 1455 and designed by a creative Englishman. In the 1500s, Sir Francis Drake another English citizen insisted on finishing his final frame before taking action against the Spanish Armada which was attacking from the English channel. He is credited with introducing the game of bowling to many cultures as he circumnavigated the globe.

The first record of bowling being played in America was by Dutch settlers in 1626 on Manhattan Island. In 1842, Connecticut outlawed the game of ninepin bowling as a result of heavy gambling on the games. Several bowling supporters changed the number of pins to ten, rearranged them into a triangle shape, and continued to encourage people to participate in the sport. (This allowed them to play legally, since there were ten pins instead of nine!)

The American Bowling Congress standardized the rules of bowling in 1895; and the first tournament for professionals and amateurs was held in 1901. Women’s bowling became official in 1916 with the Women’s International Bowling Congress. The WIBC, as it was known, held its first women’s tournament in 1917. In 1982, the Young American Bowlers Alliance (YABA) was founded to promote bowling to children and teens.

Several important advances were made in the sport of bowling in the early 1900s for many centuries bowling balls were made out of hard wood. Then, in 1905, they began manufacturing, them out of rubber. Today’s balls are made of urethane and a reactive resin. Finger holes did not gain acceptability until 1889-99, and in the early 1930s, the three-hole ball gained popularity and in 1936, a pinspotter was invented and before mechanical devices were used to reset the pins, young children sat at the end of the lane and cleared or reset the pins after each bowl. In the 1940s, the development of automatic pinsetters dramatically changed the face of bowling. Until the 1970s, all scoring was done manually on a score sheet provided by the bowling alley. Today, automatic scoring systems not only keep score, they provide a source of entertainment and instruction for bowlers. Bumper guards and cosmic bowling are two more revelations that make the sport of bowling entertaining for people of all ages and skill levels.

Activity:

Correct the spelling, grammatical, and punctuation errors in the story.
Design a comic strip superhero who is a bowler by day, superhero by night. What is your superhero’s name? What kinds of super powers does he or she have? Will the whole world be saved, or is there a particular issue to be addressed?

In the spaces below, create a comic strip featuring your superhero in action.

Title: ____________________________

[Blank comic strip]
Cool New Shoes

You’ve just gone bowling and discovered that the rental shoes....well, they weren’t as cool as they could be! In the space below, draw a picture of the ultimate cool bowling shoes.

In the box below it, design an advertisement for US Youth Bowler magazine. Include a picture of your new shoe design and write ad copy that will entice everyone to buy your shoes. Be sure to point out the features and benefits that make them cool.

Bowling Shoe Design

Advertisement
The Thomas family wants to go bowling. Problem is, they’re not sure which direction to take to get to the bowling center. Can you help them? Follow the lines, adding the numbers along the path. When you get to the exact sum of 50, they’ll arrive at the bowling center. (Hint: don’t cross lines!)
Follow the directions below. When you are finished, read the remaining words from top to bottom and left to right to reveal the hidden message. Write the hidden message on the lines below.

<table>
<thead>
<tr>
<th>HOCKEY</th>
<th>TORNADO</th>
<th>THE</th>
<th>SPAGHETTI</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERFECT</td>
<td>TACO</td>
<td>12</td>
<td>SCORE</td>
</tr>
<tr>
<td>NORTH</td>
<td>IN</td>
<td>CLOUDY</td>
<td>CAMPER</td>
</tr>
<tr>
<td>DOG</td>
<td>WASHINGTON</td>
<td>BOWLING</td>
<td>GOOD</td>
</tr>
<tr>
<td>HURRICANE</td>
<td>285</td>
<td>BEAUTIFUL</td>
<td>DIVERSITY</td>
</tr>
<tr>
<td>HAMBURGER</td>
<td>IS</td>
<td>PIZZA</td>
<td>HAPPY</td>
</tr>
<tr>
<td>TOMMY</td>
<td>DARK</td>
<td>300</td>
<td>WEST</td>
</tr>
</tbody>
</table>

- Cross off all numbers that don’t satisfy this equation: 150 x 2 = ______
- Cross off all words that refer to direction.
- Cross off all words that are weather conditions.
- Cross off all words with 6 letters.
- Cross off all words that are names of food.
- Cross off all words that start with the letter D.
- Cross off all proper nouns.
- Cross off all adjectives.

**MYSTERY MESSAGE:**

__________________________

__________________________

__________________________

__________________________
The Jones family is attending a bowling tournament. Read the clues to find out where the tournament is located.

- It’s not located in the state whose capitol is Indianapolis.
- It’s not in the smallest of the 50 states.
- It’s not in the largest of the 50 states.
- It’s not in the state directly above California.
- It’s not in the state known for cheese.
- It’s not in the Lone Star state.
- It’s not in the 50th state added.
- It’s not in the home of the Broncos, Nuggets, or Avalanche.
- It’s not in the state known for maple syrup.
- It’s not in the Bluegrass state.

<table>
<thead>
<tr>
<th>Vermont</th>
<th>Indiana</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wisconsin</td>
<td>Michigan</td>
<td>Hawaii</td>
</tr>
<tr>
<td>Colorado</td>
<td>Kentucky</td>
<td>Alaska</td>
</tr>
<tr>
<td>Texas</td>
<td>Oregon</td>
<td></td>
</tr>
</tbody>
</table>

The bowling tournament is located in ________________.
## Name that Bowler

The following are names of professional bowlers who bowl on the PBA tour. Draw a line from the bowler’s first name to his last name. (HINT: Log onto www.pba.com to get a list of pro bowlers.)

<table>
<thead>
<tr>
<th>FIRST</th>
<th>LAST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dick</td>
<td>Jaros</td>
</tr>
<tr>
<td>Norm</td>
<td>Anthony</td>
</tr>
<tr>
<td>Patrick</td>
<td>Rash</td>
</tr>
<tr>
<td>Earl</td>
<td>Duke</td>
</tr>
<tr>
<td>Mike</td>
<td>Williams, Jr.</td>
</tr>
<tr>
<td>Jason</td>
<td>Angelo</td>
</tr>
<tr>
<td>Johnny</td>
<td>Weber</td>
</tr>
<tr>
<td>Tommy</td>
<td>Barnes</td>
</tr>
<tr>
<td>Sean</td>
<td>DeVaneY</td>
</tr>
<tr>
<td>Danny</td>
<td>Bohn</td>
</tr>
<tr>
<td>Parker</td>
<td>Allen</td>
</tr>
<tr>
<td>Pete</td>
<td>Petraglia</td>
</tr>
<tr>
<td>Chris</td>
<td>Jones</td>
</tr>
<tr>
<td>Steve</td>
<td>Wiseman</td>
</tr>
<tr>
<td>Brad</td>
<td>Weber</td>
</tr>
<tr>
<td>Walter Ray</td>
<td>Couch</td>
</tr>
</tbody>
</table>
Spare Time

For each set of bowling pins, write how many have been knocked down. Then, rewrite each number as a reduced fraction and as a decimal. Remember, there are ten pins to start.

1. ____________
   - 
   - 
   - 
   - 
   - 

2. ____________
   - 
   - 

3. ____________
   - 
   - 

4. ____________
   - 
   - 
   - 

5. ____________
   - 
   - 
   - 
   - 

6. ____________
   - 
   - 

7. ____________
   - 
   - 
   - 

8. ____________
   - 
   - 

9. ____________
   - 

10. ____________
    - 
    - 

For each set of bowling pins, write how many have been knocked down. Then, rewrite each number as a percent and as a ratio of pins knocked down to pins left. Remember, there are ten pins to start.

1. ________

2. ________

3. ________

4. ________

5. ________

6. ________

7. ________

8. ________

9. ________

10. ________
The sport of bowling can be traced back to articles found in the tomb of an Egyptian child buried in 5200 B.C.! The primitive equipment included nine pieces of stone at which a stone “ball” was rolled, the ball having to first roll through an archway made of three pieces of marble. Bowling at pins is believed to have originated in Germany in the early 17th century. At that time, it was not a sport, but a religious ceremony.

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Activities:
1. Draw a “timeline” of the events mentioned in this story.
2. What other major historical events happened during those times?
3. Find each location on a map and mark it by drawing a bowling ball on or near that location.
4. Were there any words or terms in the story that you didn’t understand? Look up the definitions in a dictionary or on the Internet.
1. Bowling pins range from 3 pounds 6 ounces up to 3 pounds 10 ounces. Convert each of these to ounces. (Remember, 16 ounces = 1 pound).

3 pounds 6 ounces = ________ ounces
3 pounds 10 ounces = ________ ounces

2. Balls weigh anywhere from 6 pounds to 16 pounds. Convert each of these to ounces.

6 pounds = ___________ ounces
10 pounds = ___________ ounces
16 pounds = ___________ ounces

3. The circumference of a bowling ball is approximately 27 inches. What is the diameter? (Remember, \( c = \pi \cdot d \))

The diameter is ________ inches.

4. Now, take your answer from question 3 (the diameter) and figure the radius. (Remember, \( r = 1/2d \)).

The radius is ___________ inches.
Follow the line that will knock that pin down!

Hidden Words

Page 10

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

Only 2 pins below are identical. Can you find them?
Circle the two that are alike.
ACTION VERBS
PAGE 13

1. WENT
2. BOUGHT
3. SLIDING, SLIPPED
4. ASKED, GOING
5. SAT, WAITED
6. CAME
7. BOWLED
8. EXCLAIMED
9. GOT
10. SAID, CROSS
11. GLIDED
12. TOLD
13. FOUND
14. GUESS
15. BEAT

BOWLING CENTER TOUR
PAGE 16

Check what you learned!

1. If you weigh 105 pounds, you should choose a ball that weighs 10 or 11 pounds.
2. What device prevents your ball from going into the channel? Bumper guard
3. The automatic ball return returns the ball to the bowler.
4. Bowlers wait their turn to bowl in the settee area.
5. Why are special shoes required? Allows the bowler to slide when releasing the ball
6. How is the size of a bowling center determined? By the number of lanes
7. What is the name of the machine that resets pins? Pinsetter
8. Extra Credit: Take a tour of the bowling center. Write an essay about one of the following topics: a day in the life of a pin, a day in the life of a bowling ball, or why it would be fun to work in a bowling center.

CONNECT THE DOTS
PAGE 22

FUN WITH NUMBERS
PAGE 24

1. 10,000,000,000
2. 10,833
3. 70,000,000
4. 22,000,000—17
5. 8,000,000
6. 100
7. 5,000,000—55
8. 3,112,037
9. 1995
HEAVY BALLS
PAGE 27

The heaviest ball belongs to: Jake.
The next heaviest ball belongs to: Peter.
The next heaviest ball belongs to: Chris.
The next heaviest ball belongs to: Brandy.
The lightest ball belongs to: Janna.

HIDDEN WORDS
PAGE 28

Our experts found 35 words...

1. Bow
2. Bowl
3. Big
4. Binge
5. Bling
6. Blog
7. Blow
8. Blowen
9. Boil
10. Bong
11. Gib
12. Gilb
13. Glow
14. Go
15. Gob
16. In
17. Ingo
18. Lob
19. Log
20. Long
21. Loug
22. Nil
23. No
24. Nob
25. Nog
26. N ow
27. Oil
28. On
29. Owil
30. Wig
31. Win
32. Wimg
33. Won
34. Gin
35. Bin
36. ____________
**KEEP SCORE**

Page 30

Spare = /  Strike =

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
</tbody>
</table>

Spare = /  Strike =

<table>
<thead>
<tr>
<th>30</th>
<th>60</th>
<th>90</th>
<th>120</th>
<th>150</th>
<th>180</th>
<th>210</th>
<th>240</th>
<th>270</th>
<th>300</th>
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</table>

**MORE SCORING FUN**

Page 31

Spare = /  Strike =

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
</tbody>
</table>

Spare = /  Strike =

<table>
<thead>
<tr>
<th>18</th>
<th>27</th>
<th>51</th>
<th>70</th>
<th>79</th>
<th>99</th>
<th>115</th>
<th>131</th>
<th>139</th>
<th>148</th>
</tr>
</thead>
</table>

**LETTER CHANGE**

Page 32

Change each letter to the one that appears before it in the alphabet to solve the puzzle.

<table>
<thead>
<tr>
<th>C</th>
<th>P</th>
<th>X</th>
<th>M</th>
<th>J</th>
<th>O</th>
<th>H</th>
<th>J</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>O</td>
<td>W</td>
<td>L</td>
<td>I</td>
<td>N</td>
<td>G</td>
<td>I</td>
<td>S</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>H</th>
<th>S</th>
<th>F</th>
<th>B</th>
<th>U</th>
<th>F</th>
<th>Y</th>
<th>F</th>
<th>S</th>
<th>D</th>
<th>J</th>
<th>T</th>
<th>F</th>
</tr>
</thead>
<tbody>
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<td>G</td>
<td>R</td>
<td>E</td>
<td>A</td>
<td>T</td>
<td>E</td>
<td>X</td>
<td>E</td>
<td>R</td>
<td>C</td>
<td>I</td>
<td>S</td>
<td>E</td>
</tr>
</tbody>
</table>

**NUMBER SEARCH**

Page 33

<table>
<thead>
<tr>
<th>2</th>
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<th>9</th>
<th>3</th>
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<th>2</th>
</tr>
</thead>
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<td>8</td>
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<td>0</td>
<td>4</td>
<td>0</td>
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<tr>
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<td>5</td>
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<td>1</td>
<td>5</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>9</td>
<td>7</td>
<td>6</td>
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<td>6</td>
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<td>5</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>5</td>
<td>9</td>
<td>2</td>
<td>0</td>
<td>4</td>
<td>8</td>
<td>0</td>
</tr>
</tbody>
</table>
SCRAMBLED UP
PAGE 35

B O W L I N G
2 15 23 12 9 14 7

I S F U N
9 19 6 21 14

F O R T H E
6 15 18 20 8 5

W H O L E
23 8 15 12 5

F A M I L Y
6 1 13 9 12 25

SCRAMBLED WORDS II
PAGE 36

1. g i w o l b n l a l b  Bowling _______ ball
2. e i r k t s  Strike _______
3. p r e a s  Spare _______
4. n e t n i p  Tenpin _______
5. n a n e h l s c  Channels _______
6. l o u f i e n l  Foul _______ line _______
7. r o a c h p a p  Approach _______
8. y e v i l r e d  Delivery _______

SHAPED SQUARES
PAGE 37

Nickname for Abraham Lincoln        A B E
Snap, crackle, _______             P O P
This bird gives a hoot!            O W L
Not new                           O L D
The seed in an avocado or cherry   P I T
It’s no fun if this shows up at your picnic!   A N T
You’re 13 years old; that is your _______  A G E
How many bowling balls are in the picture?  9
What is Sport eating?  **SANDWICH**
What word appears above the bowling lanes?  **BOWL**
What is the pig’s name?  **RUDY**
How many animals wear glasses?  2
Who is on the lane about to release the ball?  **DALE**
The sport of bowling can be traced back to articles found in the tomb of an Egyptian child buried in 5200 B.C. The primitive equipment included nine pieces of stone at which a stone “ball” was rolled, the ball having to first roll through an archway made of three pieces of marble.

Bowling at pins is believed to have originated in ancient Germany in the early 17th century. At that time it was not a sport but a religious ceremony.

The first indoor bowling lanes were used in 1455 and designed by a creative Englishman. In the 1500s, Sir Francis Drake, another English citizen, insisted on finishing his final frame before taking action against the Spanish Armada which was attacking from the English channel. He is credited with introducing the game of bowling to many cultures as he circumnavigated the globe.

The first record of bowling being played in America was by Dutch settlers in 1626 on Manhattan Island. In 1842, Connecticut outlawed the game of ninepin bowling as a result of heavy gambling on the games. Several bowling supporters changed the number of pins to ten, rearranged them into a triangle shape, and continued to encourage people to participate in the sport. (This allowed them to play legally, since there were ten pins instead of nine!)

The American Bowling Congress standardized the rules of bowling in 1895; and the first tournament for professionals and amateurs was held in 1901. Women’s bowling became official in 1916 with the Women’s International Bowling Congress. The WIBC, as it was known, held its first women’s tournament in 1917. In 1982, the Young American Bowlers Alliance (YABA) was founded to promote bowling to children and teens.

Several important advances were made in the sport of bowling in the early 1900s. For many centuries bowling balls were made out of hard wood. Then, in 1905, they began manufacturing them out of rubber. Today’s balls are made of urethane and a reactive resin. Finger holes did not gain acceptability until 1889-99, and in the early 1930s, the three-hole ball gained popularity and in 1936, a pinspotter was invented and before mechanical devices were used to reset the pins, young children sat at the end of the lane and cleared or reset the pins after each bowl. In the 1940s, the development of automatic pinsetters dramatically changed the face of bowling. Until the 1970s, all scoring was done manually on a score sheet provided by the bowling alley. Today, automatic scoring systems not only keep score, they provide a source of entertainment and instruction for bowlers. Bumper guards and cosmic bowling are two more revelations that make the sport of bowling entertaining for people of all ages and skill levels.

Activity:

Correct the spelling, grammatical, and punctuation errors in the story.
Find the Way

The bowling tournament is located in **Michigan**.

**HIDDEN MESSAGE**

- HOCKEY
- PERFECT
- NORTH
- DOG
- HURRICANE
- HAMBURGER
- TOMMY
- TORNADO
- TACO
- IN
- WASHINGTON
- 285
- IS
- DARK
- THE
- 12
- CLOUDY
- CAMPER
- GOOD
- BOWLING
- BEAUTIFUL
- PIZZA
- 300
- SPAGHETTI
- SCORE
- DIVERSITY
- HAPPY
- WEST

**THE PERFECT SCORE IN BOWLING IS 300**
NAME THAT BOWLER
PAGE 52

Dick
Norm
Patrick
Earl
Mike
Jason
Johnny
Tommy
Sean
Danny
Parker
Pete
Chris
Steve
Brad
Walter Ray
Jaros
Anthony
Rash
Duke
Williams, Jr.
Angelo
Weber
Barnes
DeVaney
Bohn
Allen
Petraglia
Jones
Wiseman
Weber
Couch

SPARE TIME
PAGE 53

1. 0 0/10 .0
2. 3 3/10 .3
3. 7 7/10 .7
4. 4 2/5 .4
5. 2 1/5 .2
6. 6 3/5 .6
7. 4 2/5 .4
8. 5 1/2 .5
9. 9 9/10 .9
10. 8 4/5 .8

SPARE TIME II
PAGE 54

1. 0 0% 0:10
2. 3 30% 3:7
3. 7 70% 7:3
4. 4 40% 4:6
5. 2 20% 2:8
6. 6 60% 6:4
7. 4 40% 4:6
8. 5 50% 5:5
9. 9 90% 9:1
10. 8 80% 8:2

NAME THAT BOWLER
PAGE 52

Dick
Norm
Patrick
Earl
Mike
Jason
Johnny
Tommy
Sean
Danny
Parker
Pete
Chris
Steve
Brad
Walter Ray
Jaros
Anthony
Rash
Duke
Williams, Jr.
Angelo
Weber
Barnes
DeVaney
Bohn
Allen
Petraglia
Jones
Wiseman
Weber
Couch

SPARE TIME
PAGE 53

1. 0 0/10 .0
2. 3 3/10 .3
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4. 4 2/5 .4
5. 2 1/5 .2
6. 6 3/5 .6
7. 4 2/5 .4
8. 5 1/2 .5
9. 9 9/10 .9
10. 8 4/5 .8

SPARE TIME II
PAGE 54

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9. 9 90% 9:1
10. 8 80% 8:2
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>5000 BC</td>
<td>Bowling traced back to tomb of Egyptian child</td>
</tr>
<tr>
<td>1455</td>
<td>First indoor bowling lanes were used</td>
</tr>
<tr>
<td>1500s</td>
<td>Sir Francis Drake insisted on finishing his final frame before attacking the Spanish Armada</td>
</tr>
<tr>
<td>1626</td>
<td>First record of bowling played in America by Dutch settlers</td>
</tr>
<tr>
<td>1842</td>
<td>Connecticut outlawed ninepin bowling and the game was changed to ten pins</td>
</tr>
<tr>
<td>1895</td>
<td>The American Bowling Congress standardized the rules of bowling</td>
</tr>
<tr>
<td>1889-99</td>
<td>Finger holes gained acceptability</td>
</tr>
<tr>
<td>1901</td>
<td>First tournament held for professionals and amateurs</td>
</tr>
<tr>
<td>1905</td>
<td>Balls started being manufactured out of rubber instead of wood</td>
</tr>
<tr>
<td>1916</td>
<td>Women’s bowling became official</td>
</tr>
<tr>
<td>1917</td>
<td>First women’s bowling tournament was held</td>
</tr>
<tr>
<td>1930s</td>
<td>Three-hole balls gained popularity</td>
</tr>
<tr>
<td>1936</td>
<td>Pinspotters were invented</td>
</tr>
<tr>
<td>1940s</td>
<td>Automatic pinsetters dramatically changed the game</td>
</tr>
<tr>
<td>1970s</td>
<td>Automatic scoring systems were invented</td>
</tr>
<tr>
<td>1982</td>
<td>The YABA was founded to promote bowling to children and teens</td>
</tr>
</tbody>
</table>
Other Historical Events (Note: The historical events listed here are just a sample; your students may list other events that occurred. Answers are not provided for date ranges, since many historical events would have occurred.)

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>5000 BC</td>
<td>Agriculture begins in Mexico; The original inhabitants of Jerusalem are driven out by the Canaanites (<a href="http://www.din-timelines.com">www.din-timelines.com</a>)</td>
</tr>
<tr>
<td>1455</td>
<td>Calixtus II was the Pope in Rome (<a href="http://www.thinkworks.com">www.thinkworks.com</a>) First block Bible was published in Germany (<a href="http://www.cgi.duke.edu">www.cgi.duke.edu</a>) York won the first battle of the War of the Roses in St. Albans (<a href="http://www.editoreric.com">www.editoreric.com</a>)</td>
</tr>
<tr>
<td>1500s</td>
<td></td>
</tr>
<tr>
<td>17th Century</td>
<td></td>
</tr>
<tr>
<td>1626</td>
<td>Manhattan Island was purchased by the Dutch (<a href="http://www.gesource.ac.uk">www.gesource.ac.uk</a>)</td>
</tr>
<tr>
<td>1842</td>
<td>Coal Mines Act passed, prohibiting the employment of women and children in mines (<a href="http://www.gesource.ac.uk">www.gesource.ac.uk</a>) Crazy Horse was born in South Dakota (<a href="http://www.history.eserver.org">www.history.eserver.org</a>)</td>
</tr>
<tr>
<td>1895</td>
<td>Moving picture projector patented; World’s first movie theater opens in Paris (<a href="http://www.history.nickeysurf.com">www.history.nickeysurf.com</a>)</td>
</tr>
<tr>
<td>1889-99</td>
<td></td>
</tr>
<tr>
<td>1901</td>
<td>Oil discovered in Texas; US Steel Corp organized under JP Morgan (<a href="http://www.history.nickeysurf.com">www.history.nickeysurf.com</a>)</td>
</tr>
<tr>
<td>1905</td>
<td>Las Vegas, Nevada founded (<a href="http://www.history.nickeysurf.com">www.history.nickeysurf.com</a>)</td>
</tr>
<tr>
<td>1916</td>
<td>Professional Golfer Association (PGA) formed (<a href="http://www.history.nickeysurf.com">www.history.nickeysurf.com</a>)</td>
</tr>
<tr>
<td>1917</td>
<td>Walt Disney graduates from Benton High School; Raggedy Ann doll invented (<a href="http://www.history.nickeysurf.com">www.history.nickeysurf.com</a>)</td>
</tr>
<tr>
<td>1930s</td>
<td></td>
</tr>
<tr>
<td>1936</td>
<td>&quot;Gone With the Wind&quot; by Margaret Mitchell, published; 40 hour work week law approved (federal) (<a href="http://www.history.nickeysurf.com">www.history.nickeysurf.com</a>)</td>
</tr>
<tr>
<td>1940s</td>
<td></td>
</tr>
<tr>
<td>1970s</td>
<td></td>
</tr>
<tr>
<td>1982</td>
<td>Earl Anthony becomes 1st pro bowler to win more than $1 million; EPCOT Center opens in Orlando, Florida (<a href="http://www.history.nickeysurf.com">www.history.nickeysurf.com</a>)</td>
</tr>
</tbody>
</table>
Bowling pins range from 3 pounds 6 ounces up to 3 pounds 10 ounces. Convert each of these to ounces. *(Remember, 16 ounces = 1 pound).*

3 pounds 6 ounces = 54 ounces
3 pounds 10 ounces = 58 ounces

Balls weigh anywhere from 6 pounds to 16 pounds. Convert each of these to ounces.

6 pounds = 96 ounces
10 pounds = 160 ounces
16 pounds = 256 ounces

The circumference of a bowling ball is approximately 27 inches. What is the diameter? *(Remember, c = \(\pi \cdot d\))*

The diameter is 8.6 inches.

Now, take your answer from question 3 (the diameter) and figure the radius. *(Remember, \(r = \frac{1}{2}d\)).*

The radius is 4.3 inches.