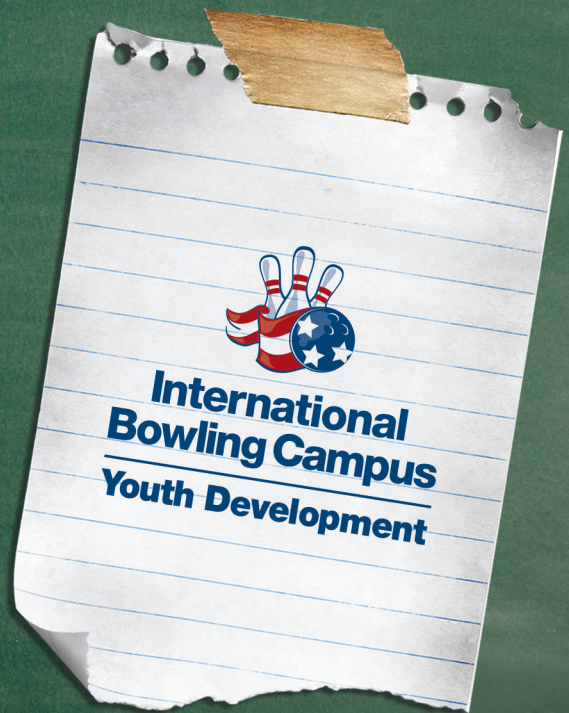




Bowler's Ed

ACADEMICS

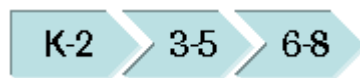


Academics

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.



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

K-2

3-5

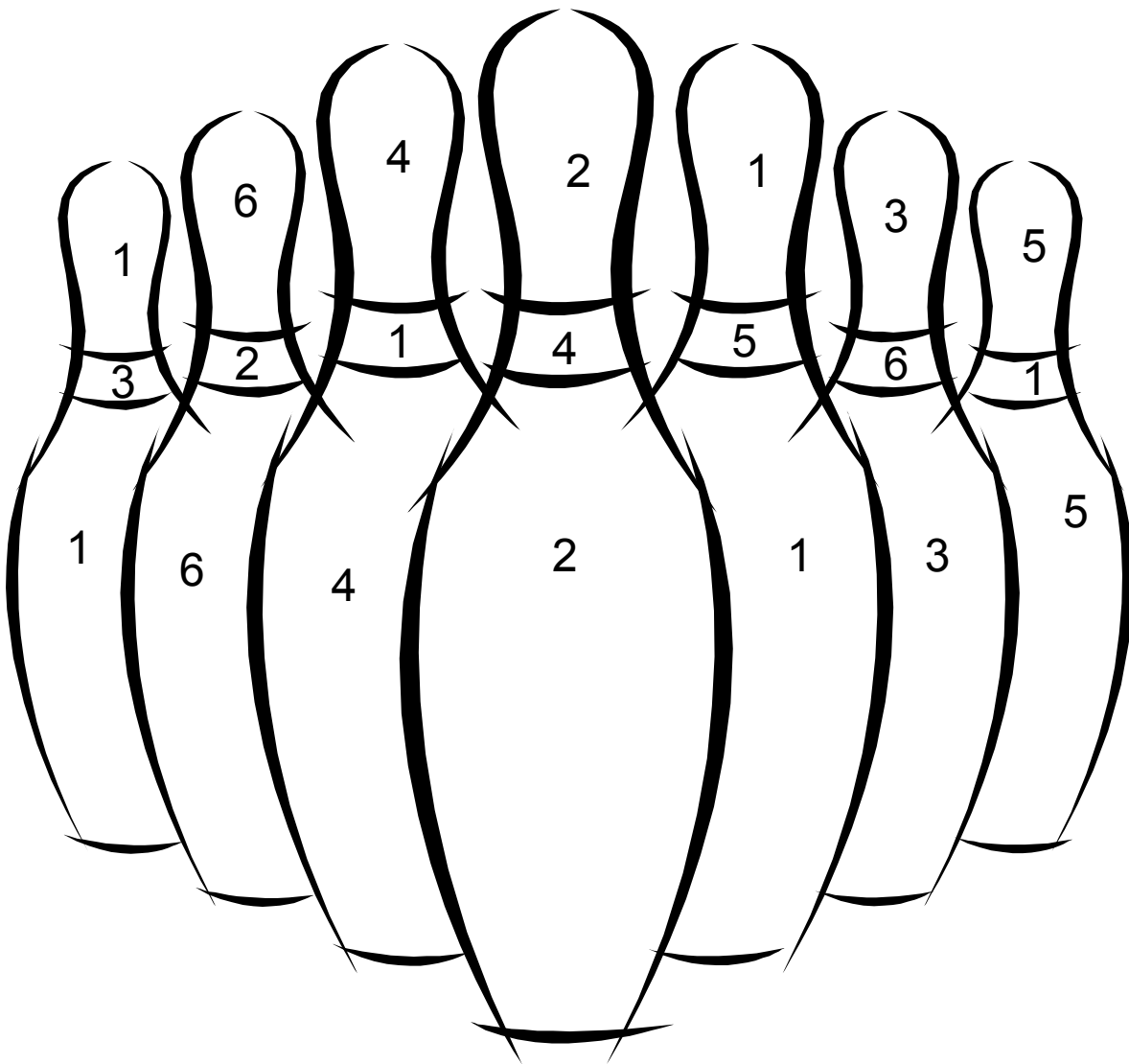
6-8

Activity	Page	Art	Computer Skills	Geography/Map Skills	Health/Nutrition	History	Language Arts	Math	Physical Education	Poetry	Problem Solving	Reading Comprehension	Spelling	Social Studies
Color by Number	3													
Connect the Dots	4													
Connect the Dots II	5													
Connect the Dots III	6													
Crazy Maze	7													
Criss-Cross Words	8													
Follow That Line	9													
Hidden Words	10													
How Many?	11													
Match That Pin	12													
Action Verbs	13													
Around the World	14													
Bowling Ballads	15													
Bowling Center Tour	16													
Bowling Maze	18													
Bowling Scorecards	19													
Color by Number	21													
Connect the Dots	22													
Daily Health Journal	23													
Fun with Numbers	24													
Health Tips	25													
Heavy Balls	27													
Hidden Words	28													
Keeping Score	29													
Letter Change	32													
Number Search	33													
Power of the Pen	34													
Scrambled Up	35													
Scrambled Up II	36													
Shaded Squares	37													
Test Your Memory	38													
Test Your Memory II	40													
What's Your Score	42													
Word Search	43													
Bowling A-Z	44													
Bowling Blunders	46													
Comic Strip Fun	47													
Cool New Shoes	48													
Find the Way	49													
Hidden Message	50													
Mystery Location	51													
Name That Bowler	52													
Spare Time	53													
Spare Time II	54													
Through the Ages	55													
Weights & Measures	56													

Color by Number

K-2

Using the Color Key below, color the picture.



Color Key

1 = blue

2 = red

3 = yellow

4 = green

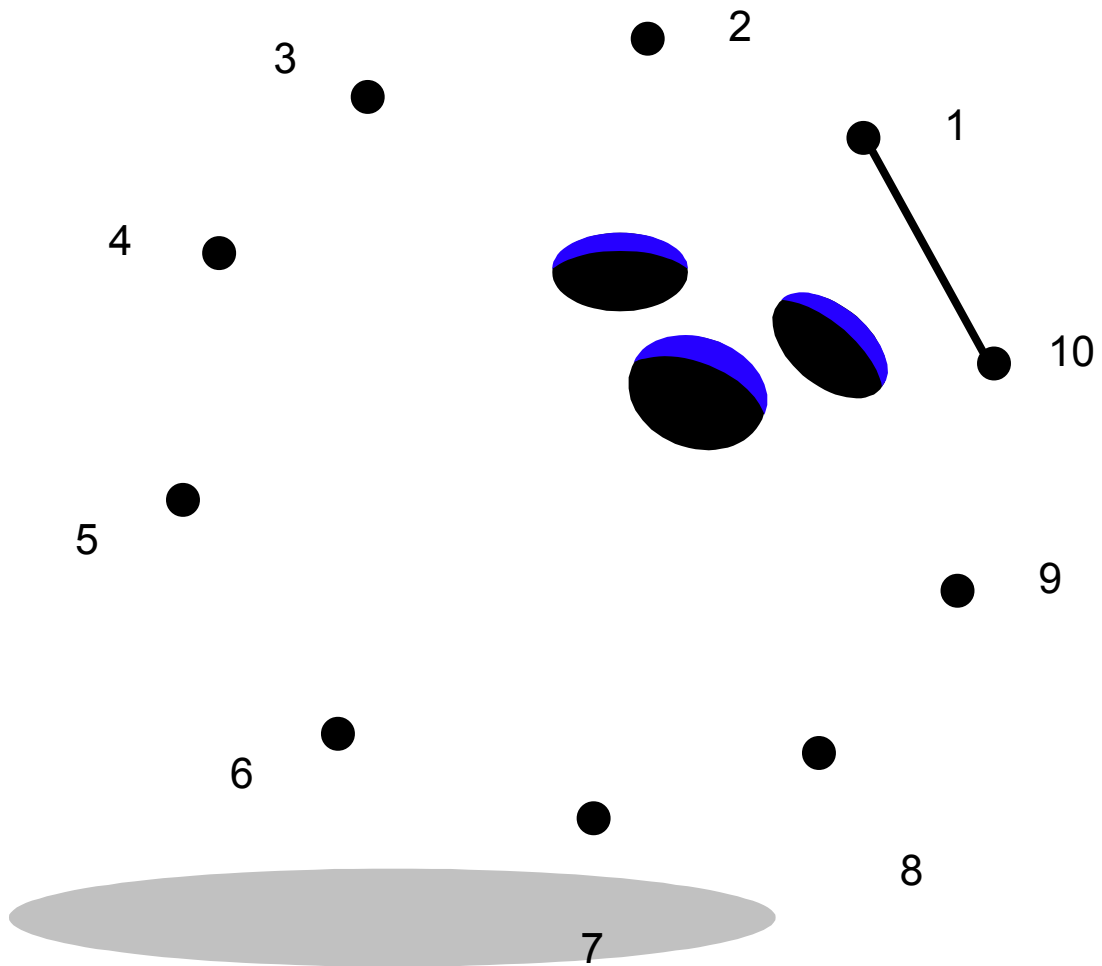
5 = brown

6 = purple

Connect the Dots

K-2

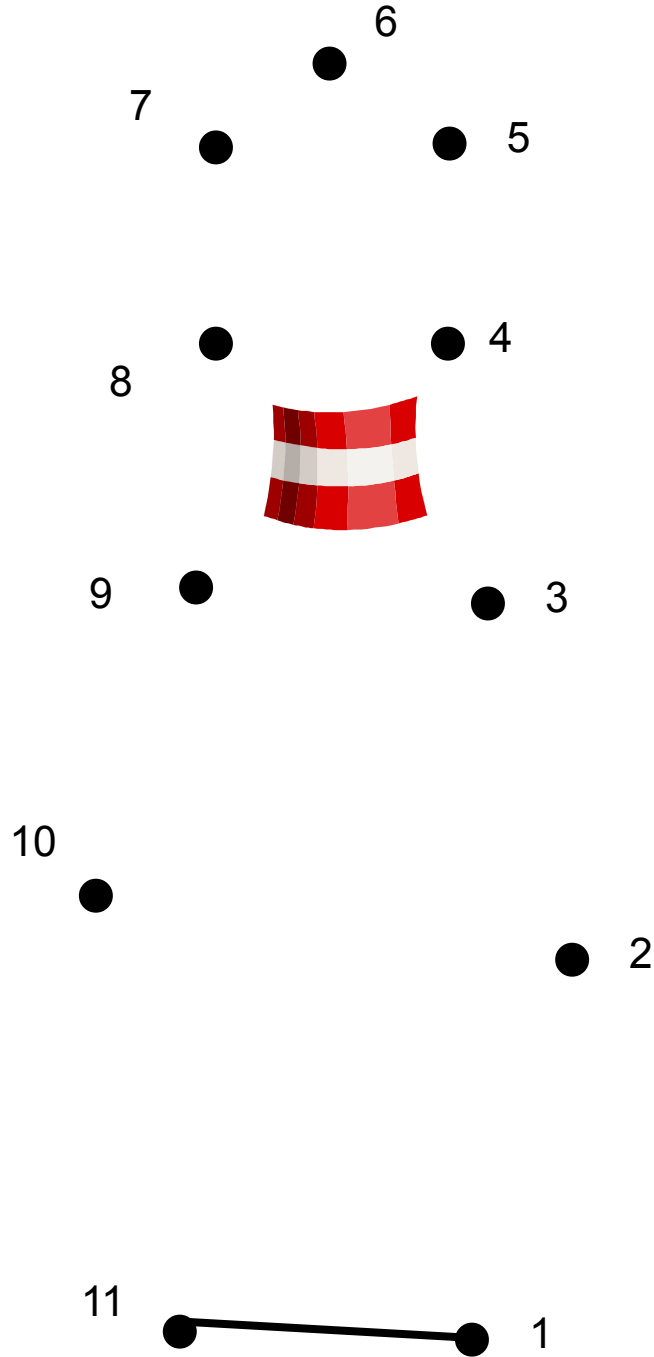
Connect the dots to reveal the hidden picture!



Connect the Dots II

K-2

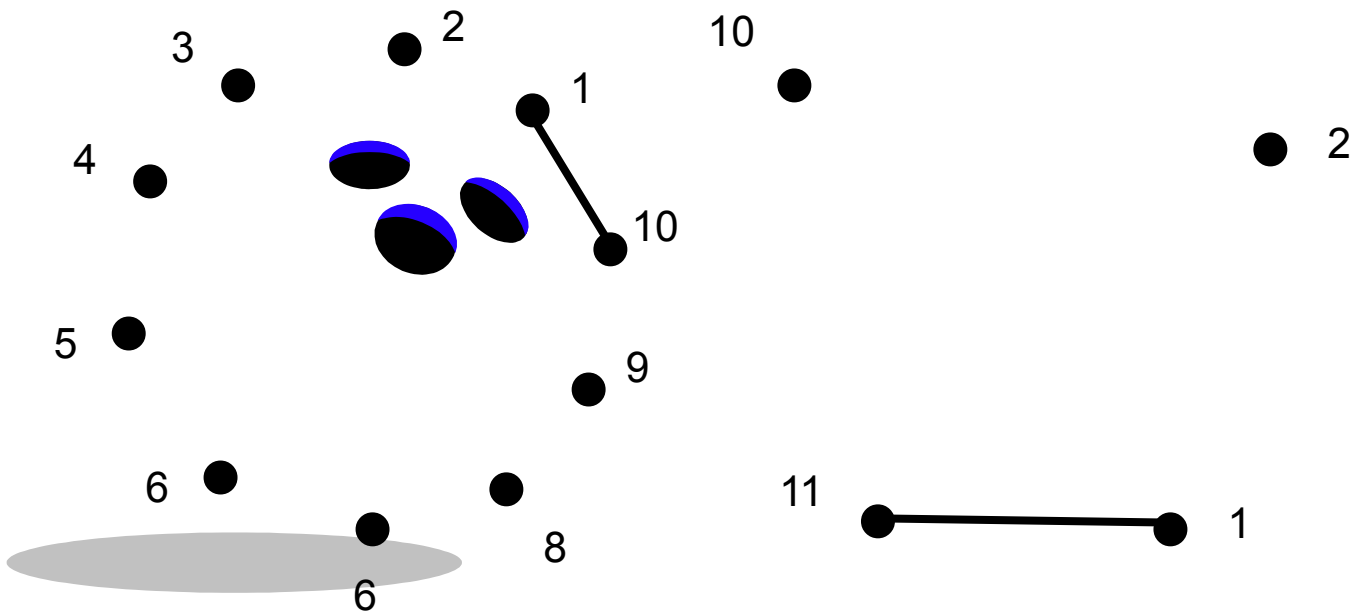
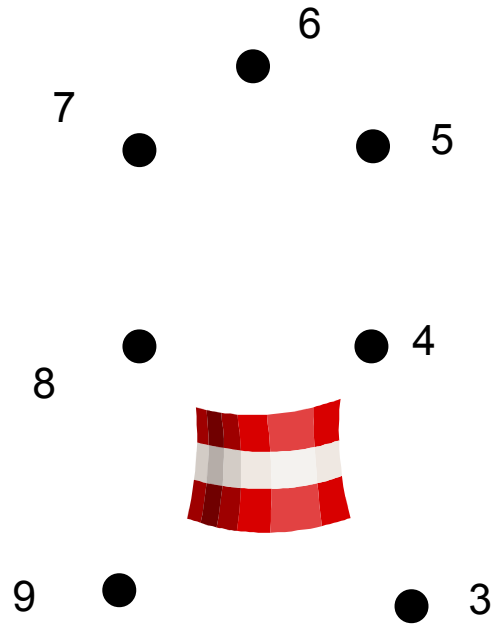
Connect the dots to reveal the hidden picture!



Connect the Dots III

K-2

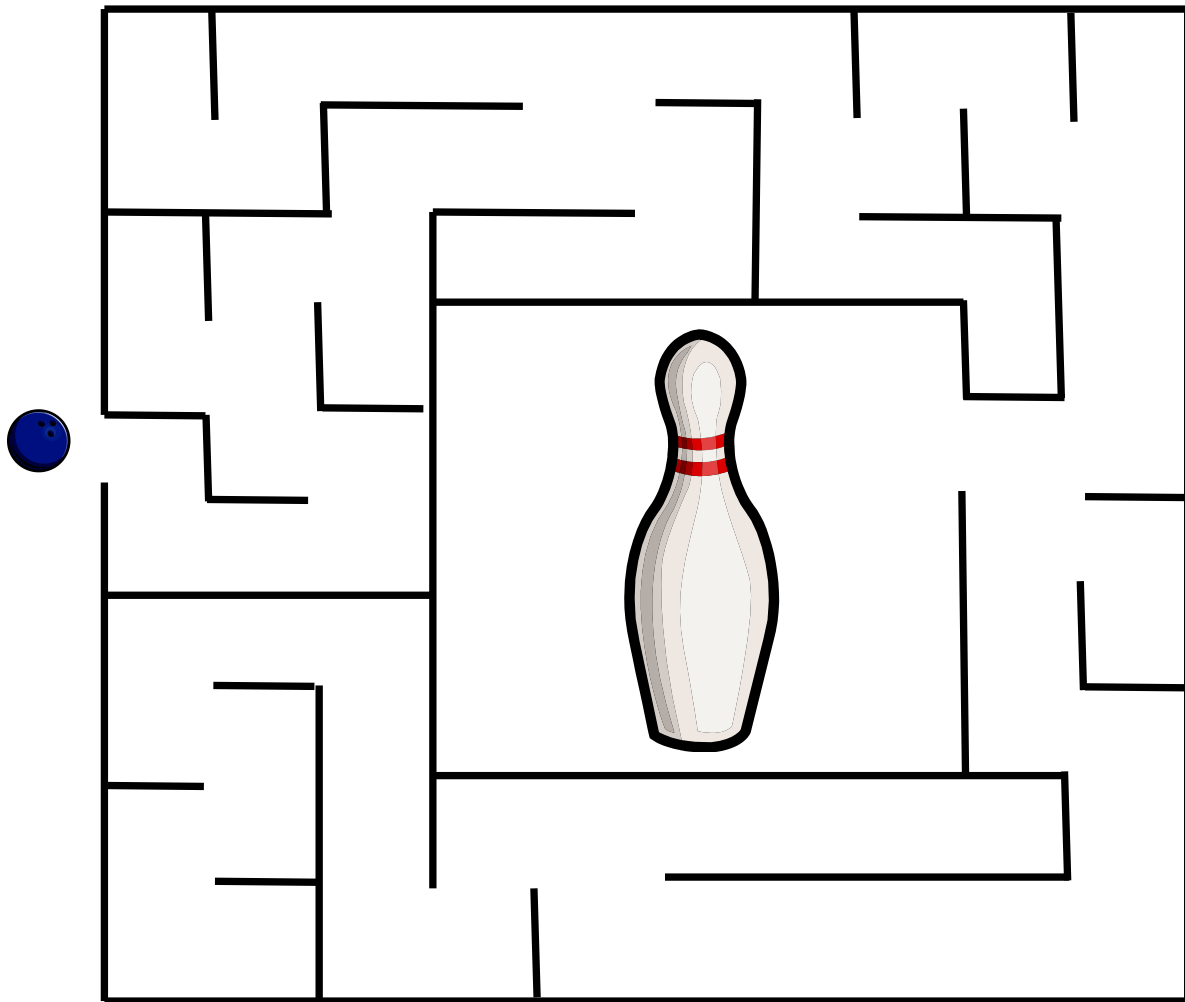
Connect the dots to reveal the hidden picture!



Crazy Maze

K-2

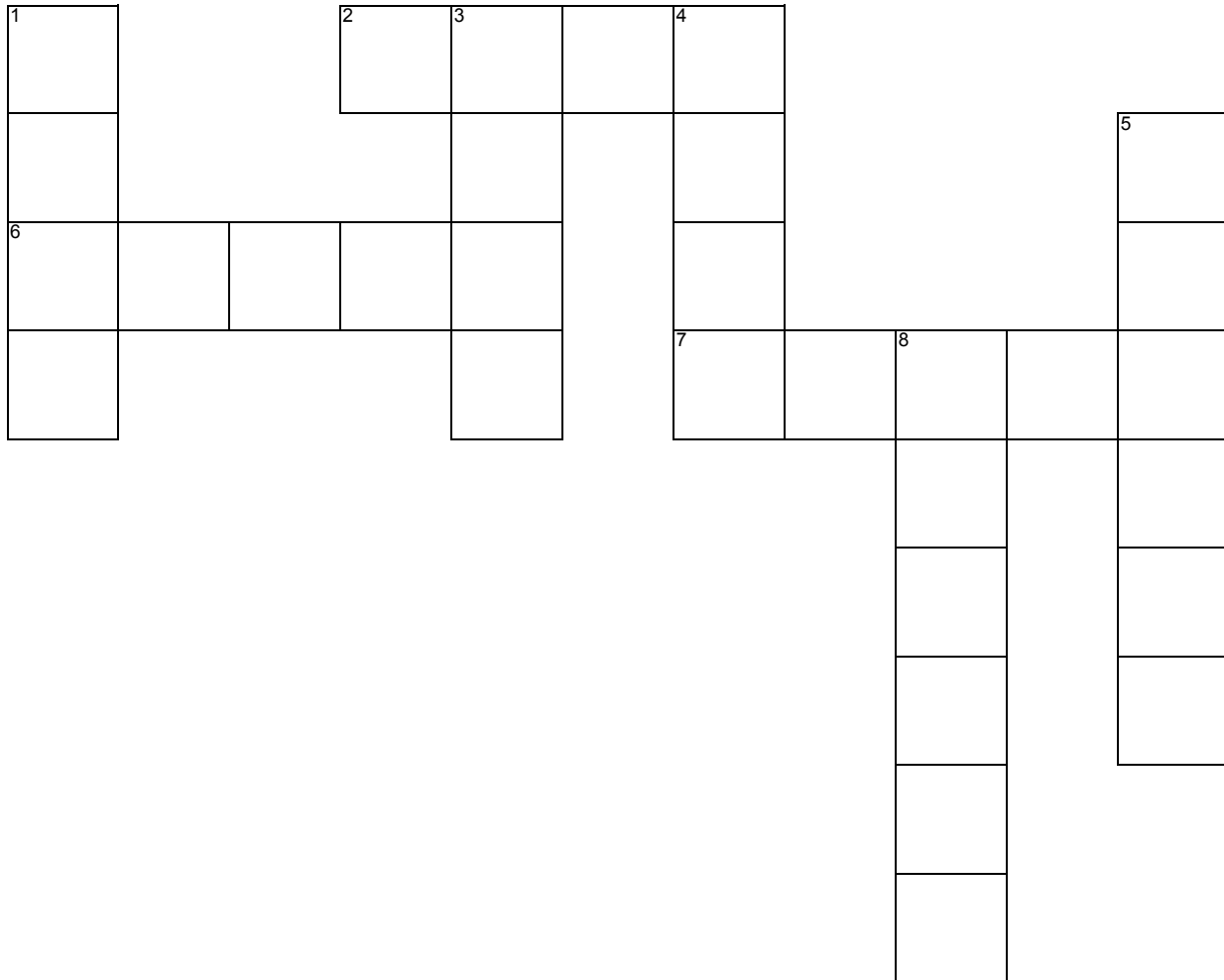
Can you help the ball find its way to the pin?



Criss-Cross Words

K-2

Can you make the words fit into the squares?



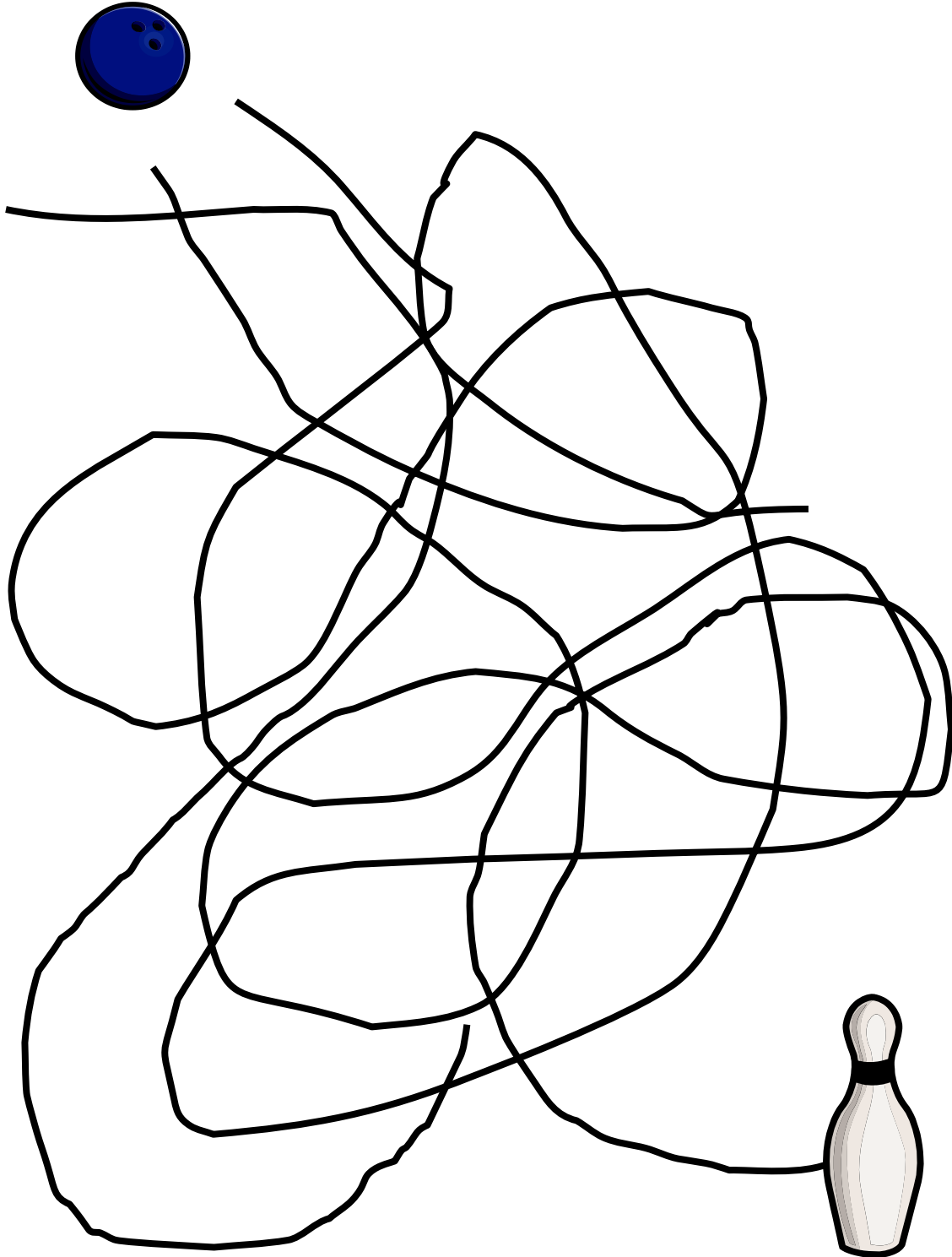
WORD LIST

Open	Strike
Bowl	Lane
Spare	Error
Return	Miss

Follow That Line!

K-2

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



Hidden Words

K-2

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

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

WORD LIST

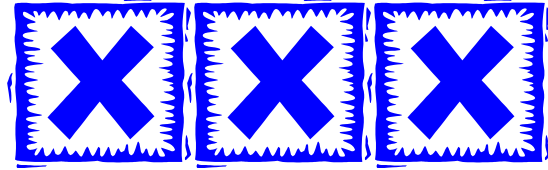
Bowl
Error
Hook
Lane
Miss
Open
Return
Spare
Strike

How Many?

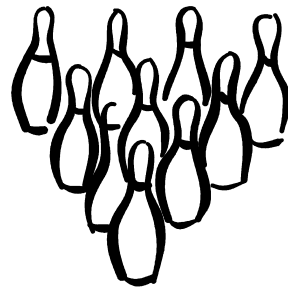
K-2

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

Five



Three



Two



Ten



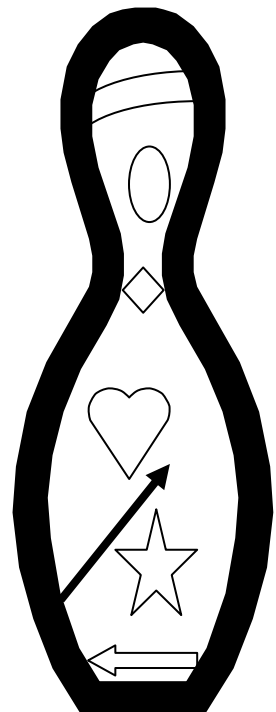
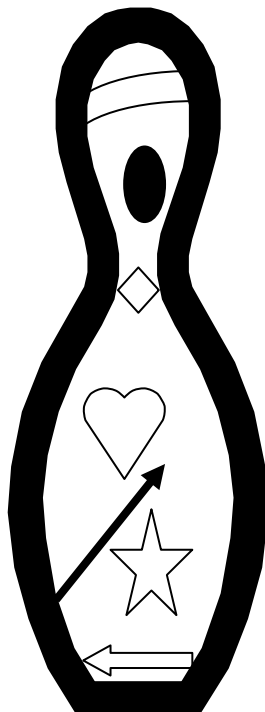
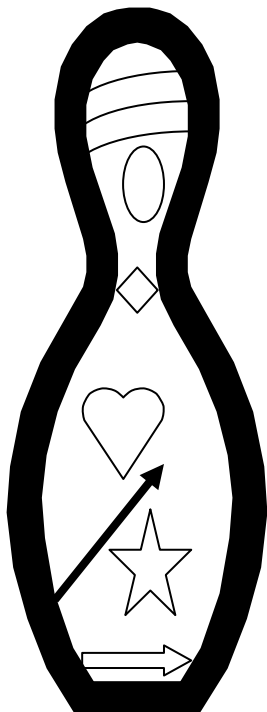
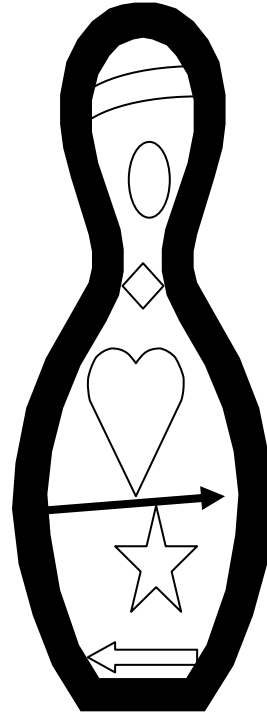
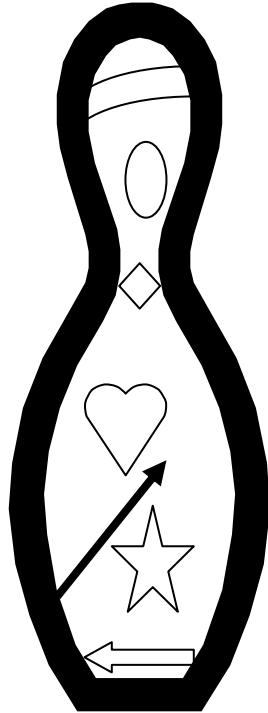
Seven



Match That Pin

K-2

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



Action Verbs

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

3-5

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

3-5

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** 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

3-5

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.

Bowling Center Tour

3-5

[continued]

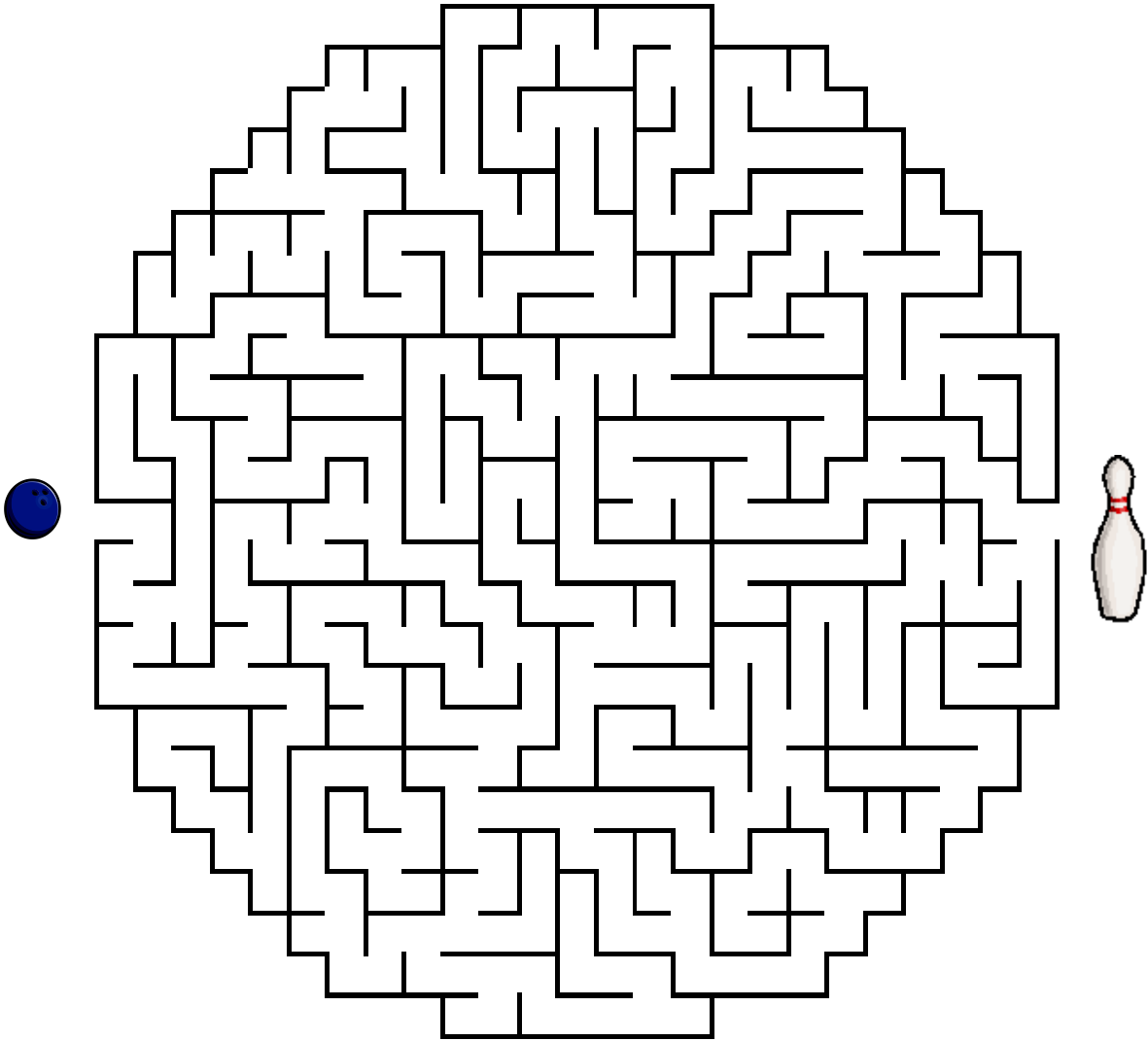
Check what you learned!

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

3-5

Help the ball find its way to the pin!



Bowling Scorecards

3-5

Name _____

Date _____

1	2	3	4	5	6	7	8	9	10

1	2	3	4	5	6	7	8	9	10

1	2	3	4	5	6	7	8	9	10

1	2	3	4	5	6	7	8	9	10

1	2	3	4	5	6	7	8	9	10

1	2	3	4	5	6	7	8	9	10

Bowling Scorecards

Name _____

1	2	3	4	5	6	7	8	9	10

1	2	3	4	5	6	7	8	9	10

1	2	3	4	5	6	7	8	9	10

1	2	3	4	5	6	7	8	9	10

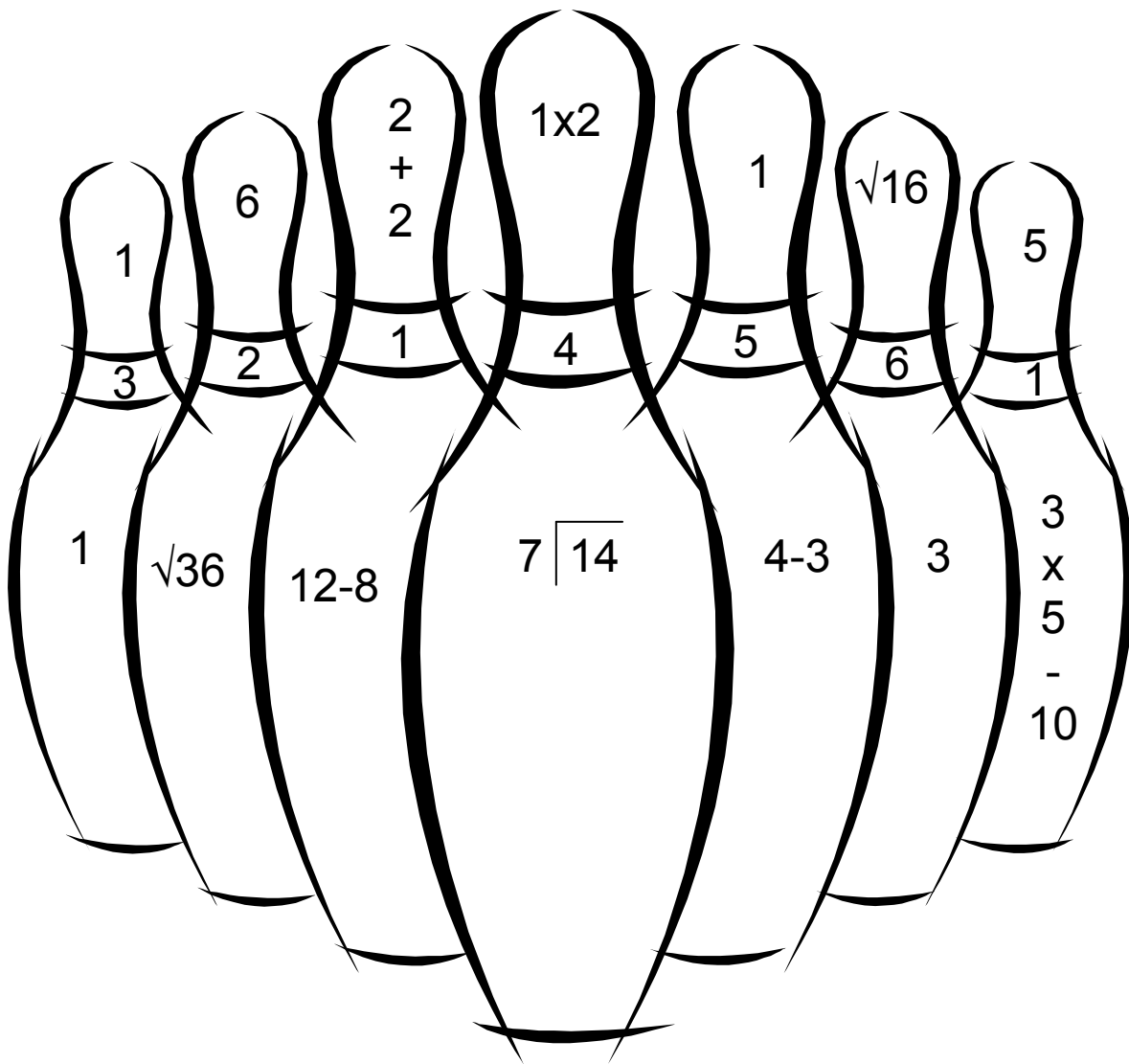
1	2	3	4	5	6	7	8	9	10

1	2	3	4	5	6	7	8	9	10

Color by Number

3-5

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



Color Key

1 = blue

2 = red

3 = yellow

4 = green

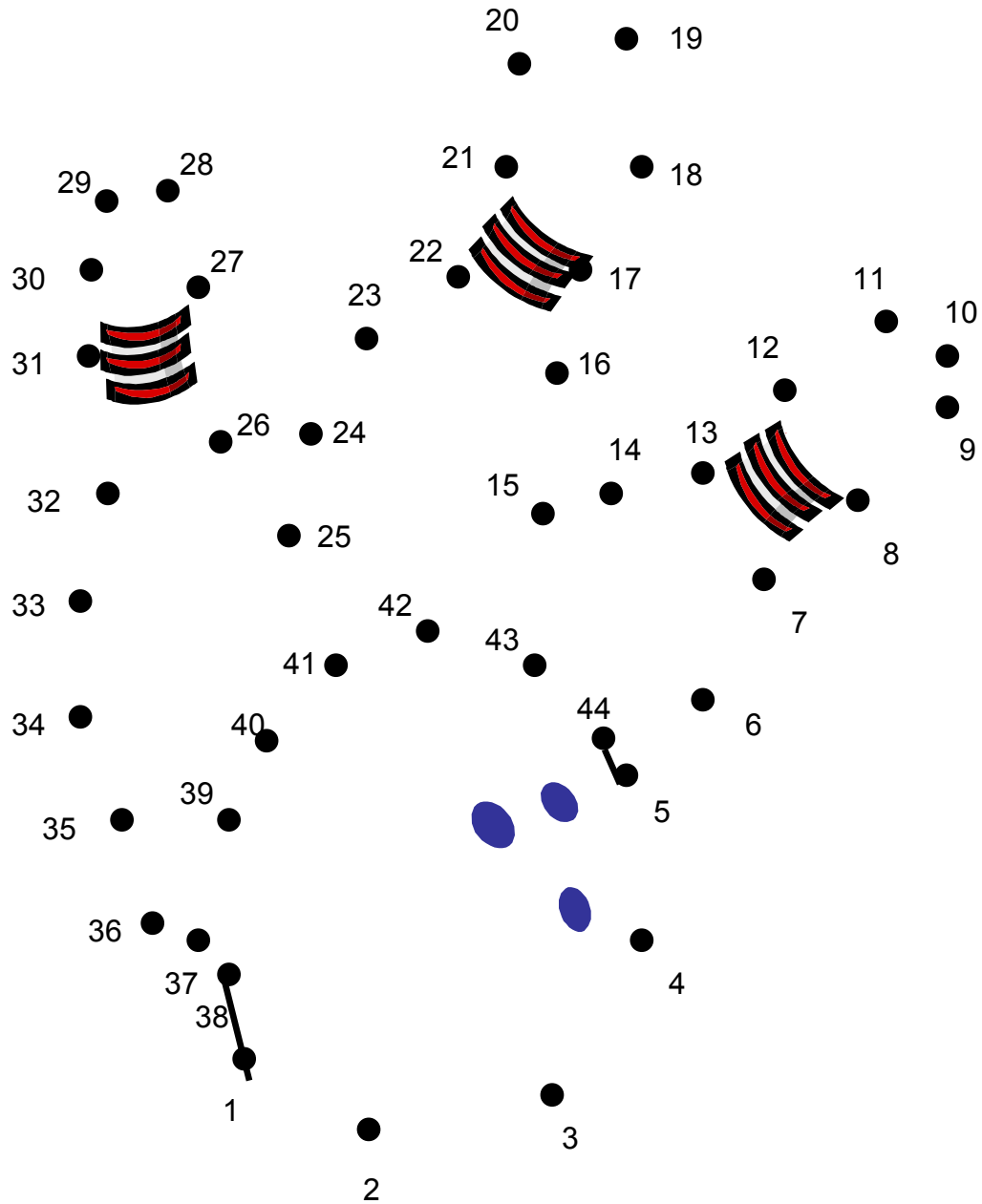
5 = brown

6 = purple

Connect the Dots

3-5

Connect the dots to reveal the hidden picture!



Daily Health Journal

3-5

Date: _____

Daily goal: _____

Breakfast: _____

Snack: _____

Lunch: _____

Snack: _____

Dinner: _____

Water consumed: _____ ounces

Type of exercise: _____

Duration: _____

Fun with Numbers

3-5

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: _____

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!

[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 you 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!

3-5

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.

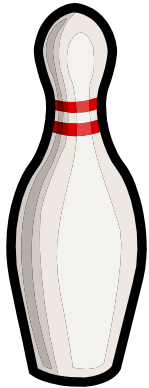
The heaviest ball belongs to: _____.

The next heaviest ball belongs to: _____.

The next heaviest ball belongs to: _____.

The next heaviest ball belongs to: _____.

The lightest ball belongs to: _____.



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** _____
- _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____

21. _____
22. _____
23. _____
24. _____
25. _____
26. _____
27. _____
28. _____
29. _____
30. _____
31. _____
32. _____
33. _____
34. _____
35. _____
36. _____
37. _____
38. _____
39. _____
40. _____

Keeping Score

3-5

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	/
9	26	34	7

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	/	X	6
9	26	34	53	62	3

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

3-5

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

1 2 3 4 5 6 7 8 9 10

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

Spare = /

Strike = X

1 2 3 4 5 6 7 8 9 10

More Scoring Fun!

3-5

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 3 rd time on the 10 th frame?

Spare = / Strike = X

1	2	3	4	5	6	7	8	9	10																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; height: 20px;"></td> <td style="width: 10%; height: 20px;"></td> <td style="width: 10%; height: 20px;"></td> <td style="width: 10%; height: 20px;"></td> <td style="width: 10%; height: 20px;"></td> <td style="width: 10%; height: 20px;"></td> <td style="width: 10%; height: 20px;"></td> <td style="width: 10%; height: 20px;"></td> <td style="width: 10%; height: 20px;"></td> <td style="width: 10%; height: 20px;"></td> </tr> <tr> <td style="width: 10%; height: 20px;"></td> <td style="width: 10%; height: 20px;"></td> <td style="width: 10%; height: 20px;"></td> <td style="width: 10%; height: 20px;"></td> <td style="width: 10%; height: 20px;"></td> <td style="width: 10%; height: 20px;"></td> <td style="width: 10%; height: 20px;"></td> <td style="width: 10%; height: 20px;"></td> <td style="width: 10%; height: 20px;"></td> <td style="width: 10%; height: 20px;"></td> </tr> </table>																													

Letter Change

3-5

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

H	S	F	B	U

F	Y	F	S	D	J	T	F

Number Search

3-5

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

080428

25694

0803

9204

2199

812

4591

9765

955

9652

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 _____.

Power of the Pen

3-5

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

3-5

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	!

Scrambled Up II

3-5

Unscramble the words to reveal popular bowling terms.

giwolbn lalb _____

eirkts _____

preas _____

netnip _____

nanehlsc _____

louf ienl _____

roachpap _____

yevilred _____

Shaded Squares

3-5

Solve the puzzle by answering all of the questions. The shaded squares reveal the secret word.

Nickname for Abraham Lincoln			
Snap, Crackle, _____			
This bird gives a hoot!			
Not new			
The seed in an avocado or cherry			
It's no fun if this shows up at your picnic!			
You're 10 years old; that is your _____			

The secret word is _____.

Test Your Memory

3-5

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

3-5

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

Test Your Memory II

3-5

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

3-5

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?

3-5

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

3-5

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

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

Approach
Bowling Center
Channels
Delivery
Error
Foul Line
Gutter Ball
Hook

Inside
Jason Couch
Kegler
Lane
Miss
Norm Duke
Open
Pin Deck

Quick Eight
Return
Strike
Target Arrows
Under
Wood
YABA
Zero in

Bowling A-Z Criss-Cross

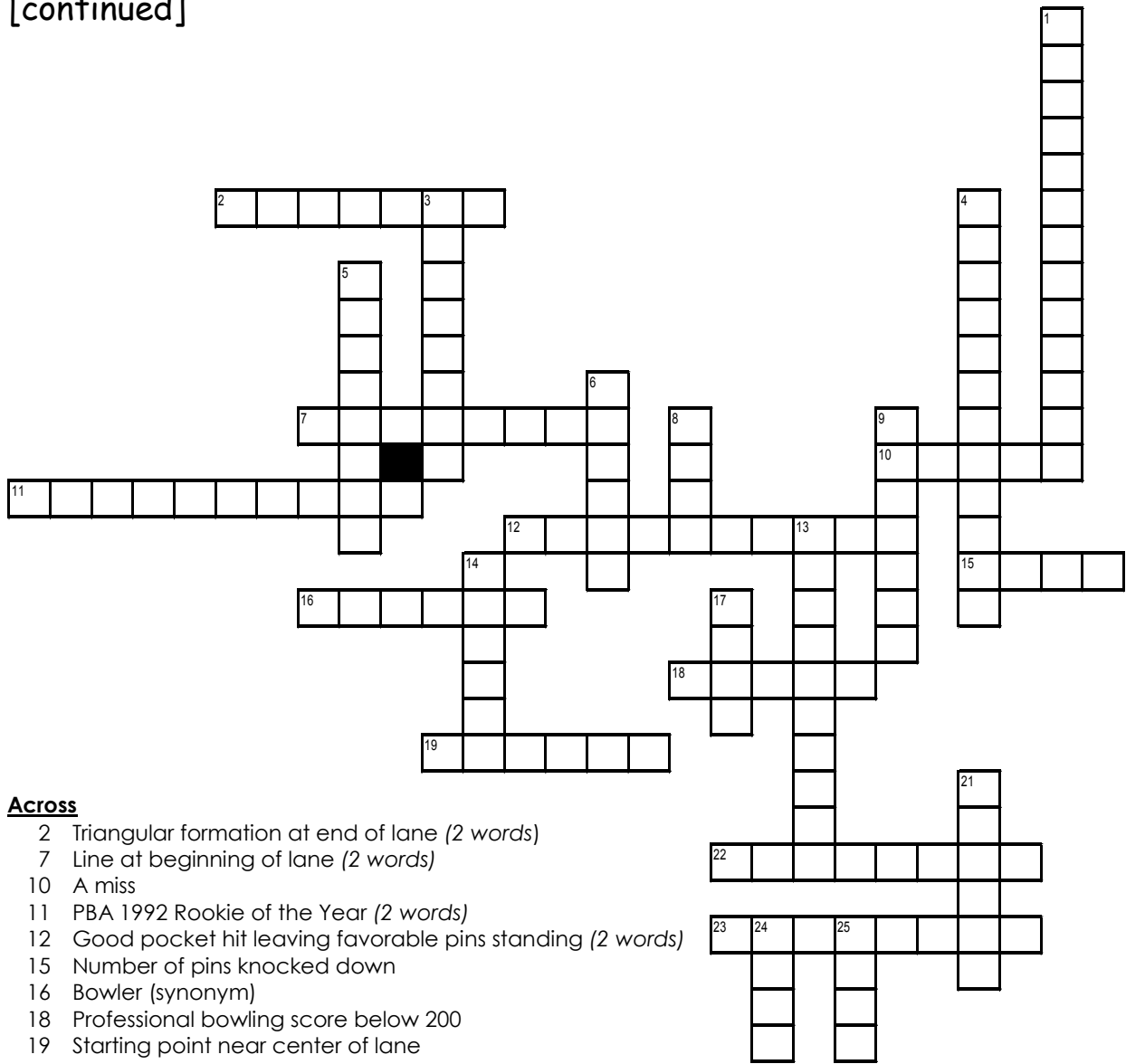
6-8

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

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

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

Bowling Blunders

6-8

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 pinspinner 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.

Comic Strip Fun

6-8

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: _____

Cool New Shoes

6-8

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

Hidden Message

6-8

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.

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

- Cross off all numbers that don't satisfy this equation: $150 \times 2 = \underline{\hspace{2cm}}$
- Cross off all words that refers 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:

Mystery Location

6-8

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.

Vermont	Indiana	Rhode Island
Wisconsin	Michigan	Hawaii
Colorado	Kentucky	Alaska
Texas	Oregon	

The bowling tournament is located in _____.

Name that Bowler

6-8

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.)

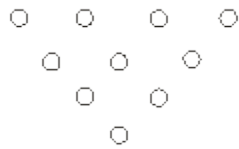
FIRST	LAST
Dick	Jaros
Norm	Anthony
Patrick	Rash
Earl	Duke
Mike	Williams, Jr.
Jason	Angelo
Johnny	Weber
Tommy	Barnes
Sean	DeVaney
Danny	Bohn
Parker	Allen
Pete	Petraglia
Chris	Jones
Steve	Wiseman
Brad	Weber
Walter Ray	Couch

Spare Time

6-8

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. _____



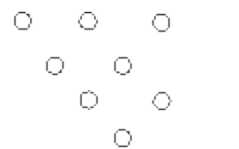
3. _____



4. _____



5. _____



6. _____



7. _____



8. _____



9. _____



10. _____

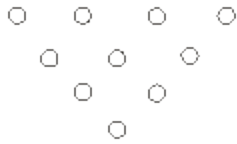


Spare Time II

6-8

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. _____



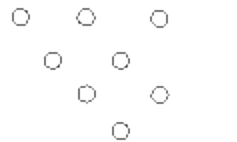
3. _____



4. _____



5. _____



6. _____



7. _____



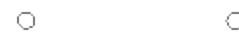
8. _____



9. _____



10. _____



Through the Ages

6-8

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.

The first indoor bowling lanes were used in 1455 and designed by a creative Englishman. In the 1500s, Sir Francis Drake, another English citizen and famous sailor, 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. In 2005, the ABC, WIBC, and YABA merged to form the United States Bowling Congress (USBC).

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. In 1936, a pinspotter was invented. 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.

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.

Weights & Measures

6-8

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

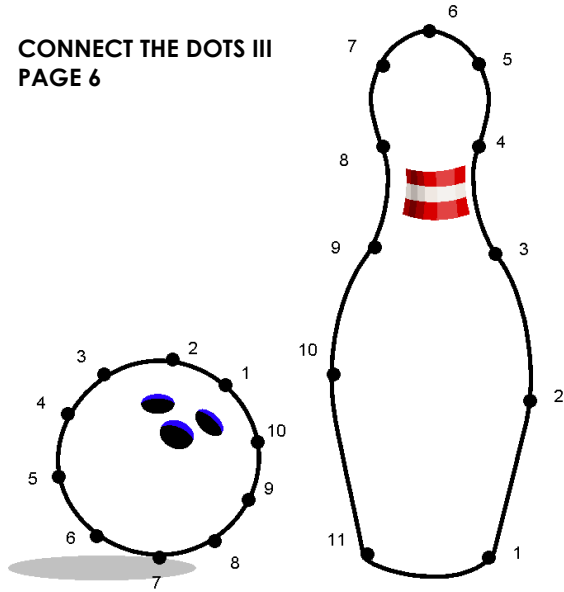
3. The circumference of a bowling ball is approximately 27 inches. What is the diameter? (*Remember, $c = \pi \cdot d$*)

The diameter is _____ inches.

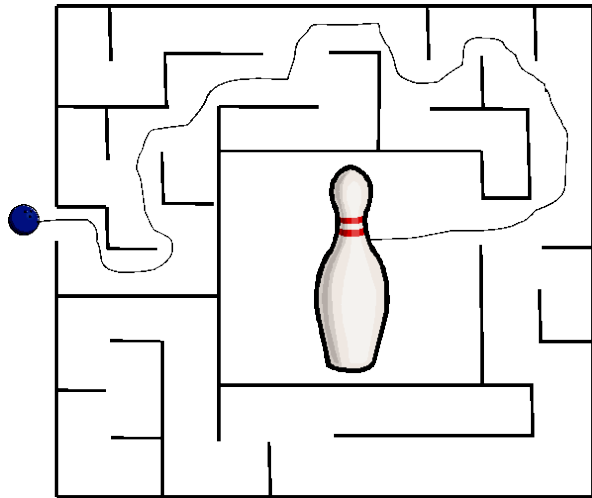
4. Now, take your answer from question 3 (the diameter) and figure the radius. (*Remember, $r = 1/2d$*).

The radius is _____ inches.

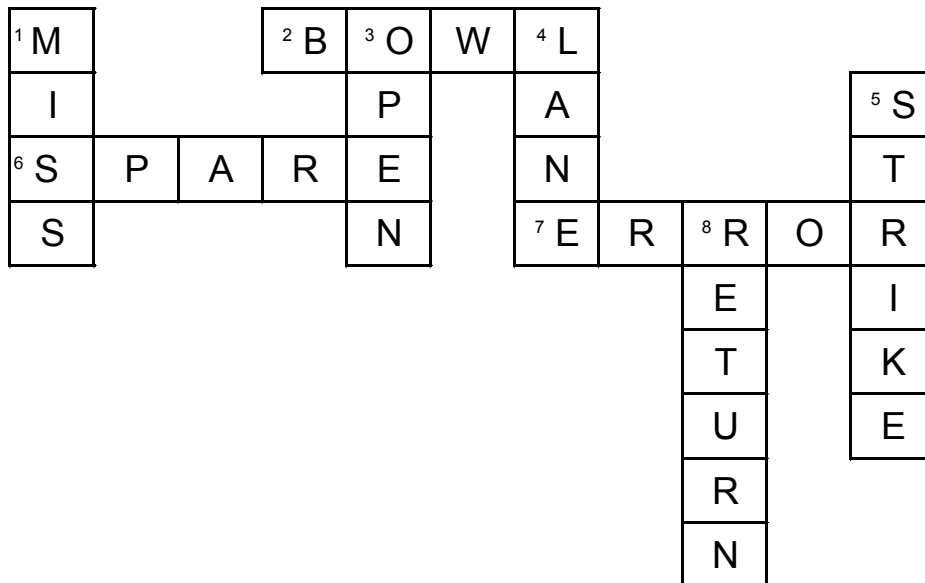
**CONNECT THE DOTS III
PAGE 6**



**CRAZY MAZE
PAGE 7**



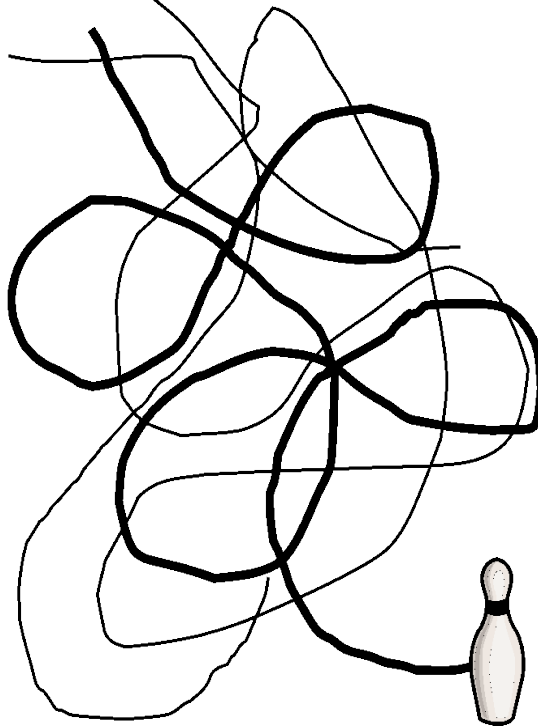
**CRISS CROSS WORDS
PAGE 8**



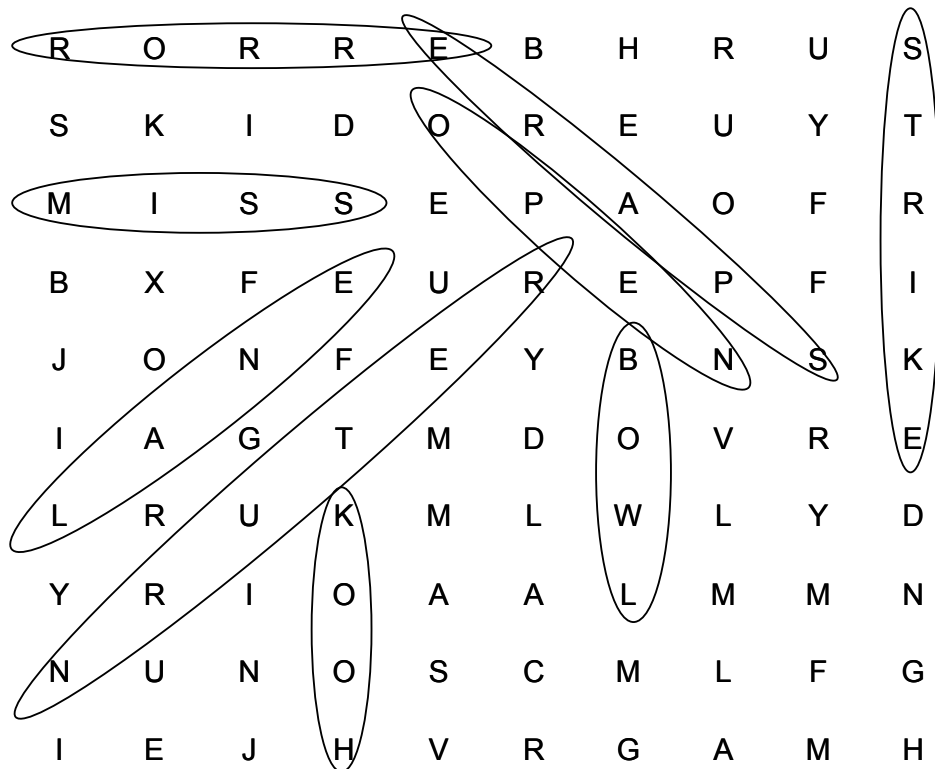
FOLLOW THAT LINE
PAGE 9



Follow the line that will
knock that pin down!



HIDDEN WORDS
PAGE 10



**HOW MANY
PAGE 11**

Five

Three

Two

Ten

Seven

**MATCH THAT PIN
PAGE 12**

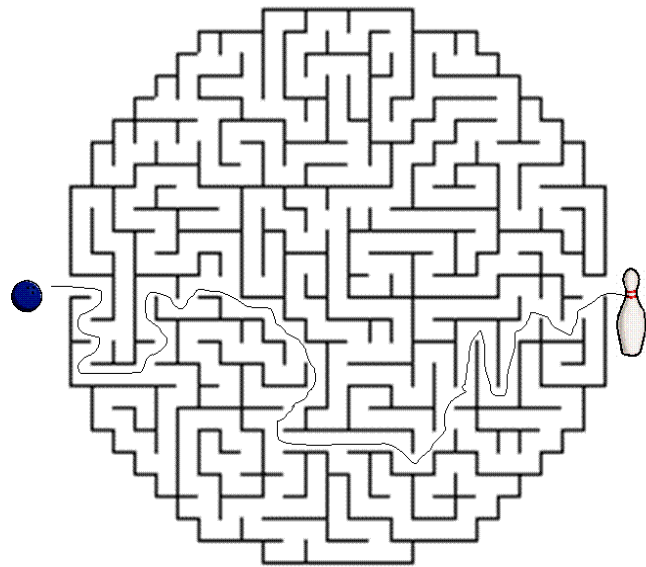
Match That Pin

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 MAZE
PAGE 18

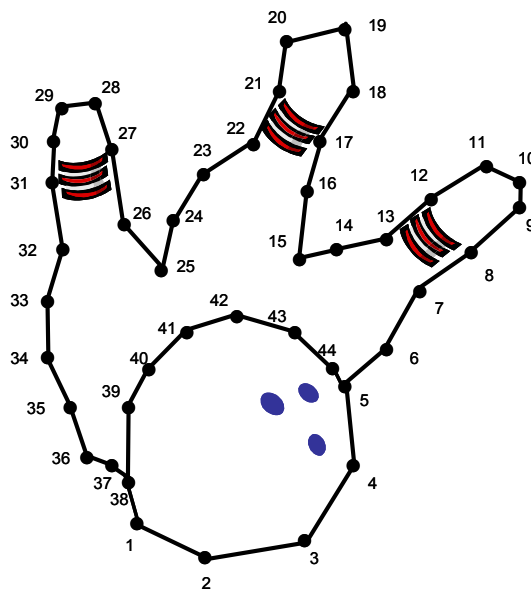


BOWLING CENTER TOUR
PAGE 16

Check what you learned!

1. If you weigh 105 pounds, you should choose a ball that weights 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. <u> B o w </u> | 13. <u> g l o w </u> | 25. <u> n o g </u> |
| 2. <u> B o w l </u> | 14. <u> g o </u> | 26. <u> n o w </u> |
| 3. <u> b i g </u> | 15. <u> g o b </u> | 27. <u> o i l </u> |
| 4. <u> b i n g o </u> | 16. <u> i n </u> | 28. <u> o n </u> |
| 5. <u> b l i n g </u> | 17. <u> l i n g o </u> | 29. <u> o w l </u> |
| 6. <u> b l o g </u> | 18. <u> l o b </u> | 30. <u> w i g </u> |
| 7. <u> b l o w </u> | 19. <u> l o g </u> | 31. <u> w i n </u> |
| 8. <u> b l o w n </u> | 20. <u> l o n g </u> | 32. <u> w i n g </u> |
| 9. <u> b o i l </u> | 21. <u> l o w </u> | 33. <u> w o n </u> |
| 10. <u> b o n g </u> | 22. <u> n i l </u> | 34. <u> g i n </u> |
| 11. <u> g i b </u> | 23. <u> n o </u> | 35. <u> b i n </u> |
| 12. <u> g l i b </u> | 24. <u> n o b </u> | 36. <u> </u> |

KEEP SCORE
PAGE 30

Spare = / Strike = X

1	2	3	4	5	6	7	8	9	10
2 7 8 /	7 1	X 6 3	X 5 /	8 1	6 2 7 /	9			
9	26	34	53	62	82	100	109	117	136

Spare = / Strike = X


1	2	3	4	5	6	7	8	9	10
X	X	X	X	X	X	X	X	X	X
30	60	90	120	150	180	210	240	270	300

MORE SCORING FUN
PAGE 31

Spare = / Strike = X

1	2	3	4	5	6	7	8	9	10
3 /	8 1	X	X 4 5	X 5 /	6 /	6 2	7 2		
18	27	51	70	79	99	115	131	139	148

LETTER CHANGE
PAGE 32



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
B	O	W	L	I	N	G	I	S

H	S	F	B	U	F	Y	F	S	D	J	T	F
G	R	E	A	T	E	X	E	R	C	I	S	E

NUMBER SEARCH
PAGE 33

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

**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. giwolbn lalb Bowling ball

2. eirkts Strike

3. preas Spare

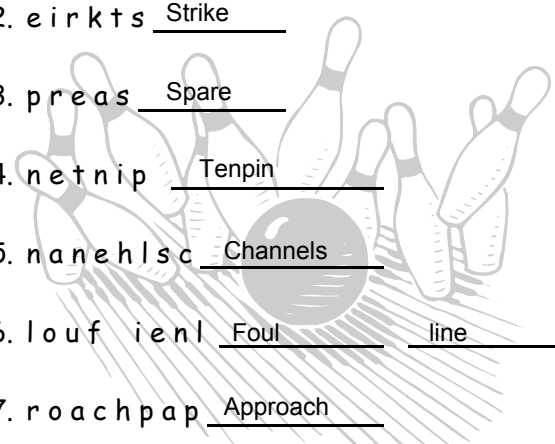
4. netnip Tenpin

5. nanehisc Channels

6. louf ienl Foul line

7. roachpap Approach

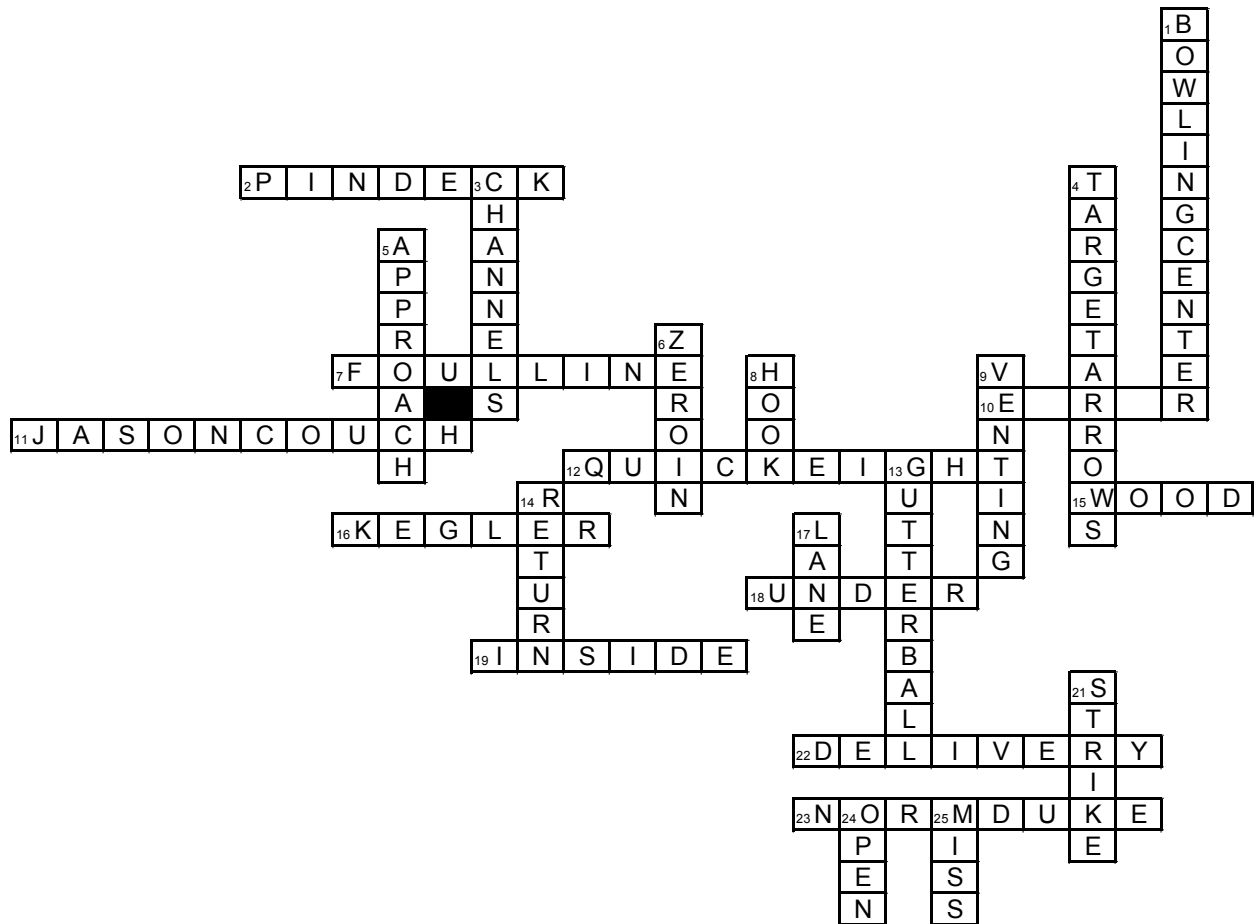
8. yevilred Delivery



**SHADED 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

BOWLING A-Z
PAGE 44



BOWLING BLUNDERS

PAGE 46

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.

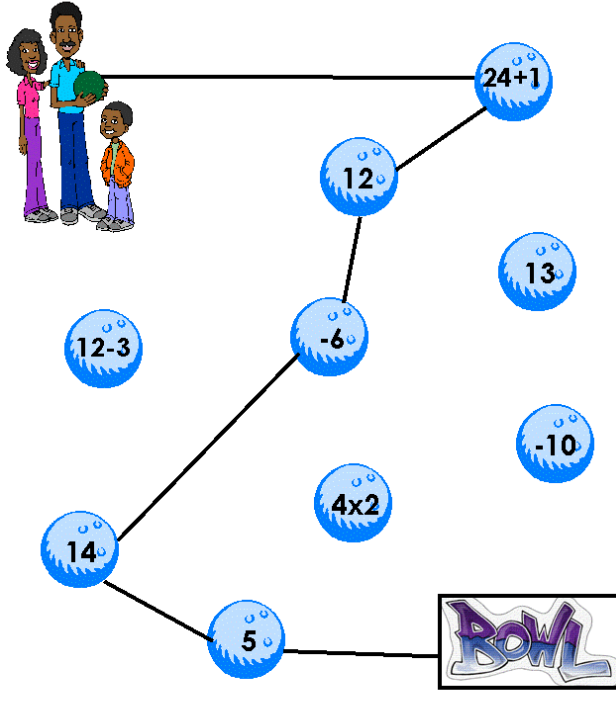
Several important advances were made in the sport of bowling in the early 1900s for many centuries bowling balls were made out of hard wood. Then, in 1905, they began manufacturing them out of rubber. Today's balls are made of urethane and a reactive resin. Finger holes did not gain acceptability until 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
PAGE 49

Find the Way



MYSTERY LOCATION
PAGE 51

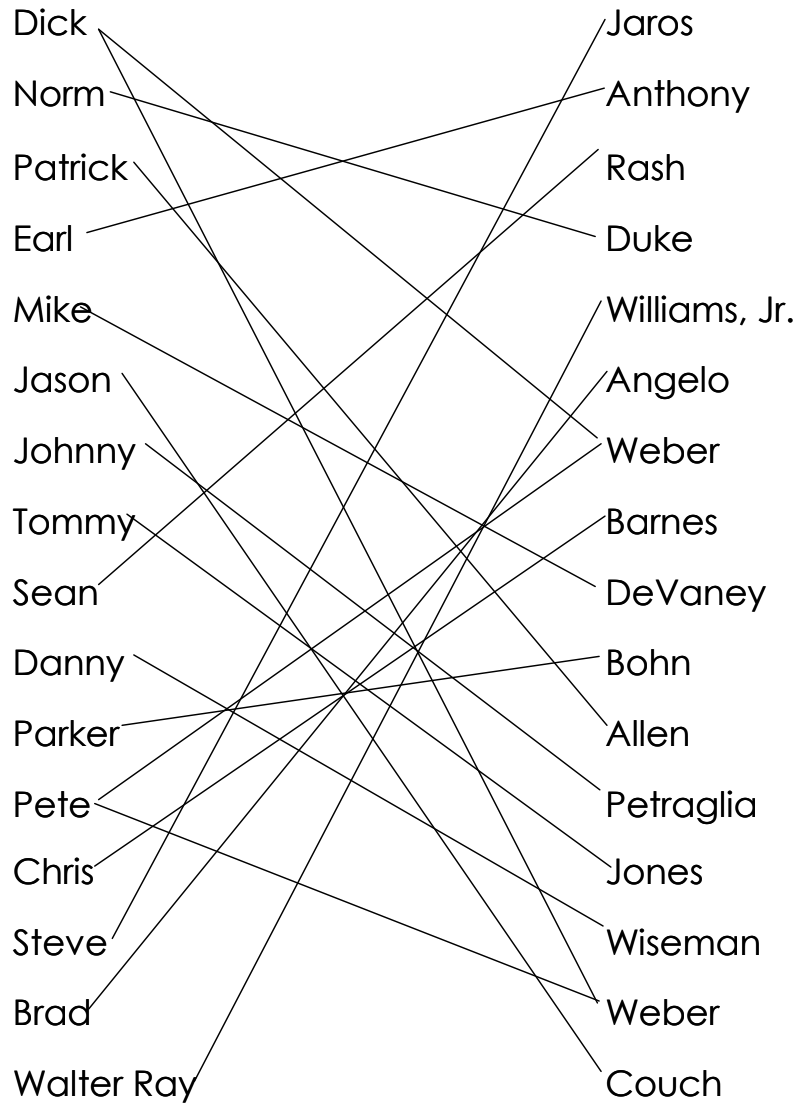
The bowling tournament
is located in Michigan.

HIDDEN MESSAGE
PAGE 50

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

THE PERFECT SCORE IN BOWLING IS 300

NAME THAT BOWLER
PAGE 52



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

Date	Event
5000 BC	Bowling traced back to tomb of Egyptian child
1455	First indoor bowling lanes were used
1500s	Sir Francis Drake insisted on finishing his final frame before attacking the Spanish Armada
17 th Century	Bowling at pins originated in ancient Germany as a religious ceremony
1626	First record of bowling played in America by Dutch settlers
1842	Connecticut outlawed ninepin bowling and the game was changed to ten pins
1895	The American Bowling Congress standardized the rules of bowling
1889-99	Finger holes gained acceptability
1901	First tournament held for professionals and amateurs
1905	Balls started being manufactured out of rubber instead of wood
1916	Women's bowling became official
1917	First women's bowling tournament was held
1930s	Three-hole balls gained popularity
1936	Pinspotters were invented
1940s	Automatic pinsetters dramatically changed the game
1970s	Automatic scoring systems were invented
1982	The YABA was founded to promote bowling to children and teens

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.)

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

WEIGHTS & MEASURES
PAGE 56

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).

$$\begin{aligned} 3 \text{ pounds } 6 \text{ ounces} &= \underline{54} \text{ ounces} \\ 3 \text{ pounds } 10 \text{ ounces} &= \underline{58} \text{ ounces} \end{aligned}$$

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

$$\begin{aligned} 6 \text{ pounds} &= \underline{96} \text{ ounces} \\ 10 \text{ pounds} &= \underline{160} \text{ ounces} \\ 16 \text{ pounds} &= \underline{256} \text{ ounces} \end{aligned}$$

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

$$\text{The diameter is } \underline{8.6} \text{ inches.}$$

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

$$\text{The radius is } \underline{4.3} \text{ inches.}$$