Indiana Farm Bureau®
Agriculture in the Classroom

2023 BOOK OF THE YEAR

EDUCATOR GUIDE

Name: _____

HOW MANY WORDS?

How many other words can you discover using only the consonants and vowels found in the word "**strawberries**"?
Write the words on the lines below.

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STRAWBERRY BOARD GAME

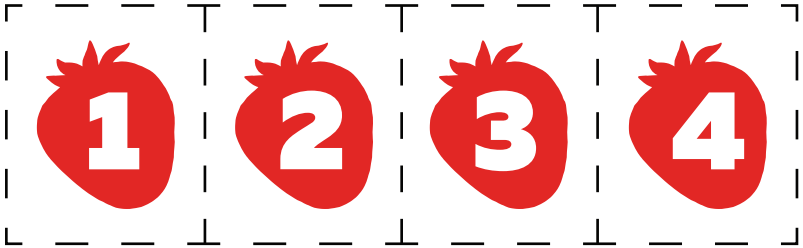
Flavor is influenced by weather, variety and ripeness. **Add 3 points**	One cup of strawberries is only 49 calories. **Add 3 points**	Left your strawberries at home. **Minus 2 points**	Strawberries are 91% water. **Add 2 points**	Strawberries have antioxidants that promote good health. **Add 4 points**	Left your strawberries on the school bus. **Minus 3 points**
75% of strawberries are grown in California. **Add 1 point**	MOVE **ONE** SPACE				Strawberries can reduce the risk of heart disease. **Add 3 points**
Not enough fruits in your meal. **Go back 2 spaces**	MOVE **THREE** SPACES		MOVE **FOUR** SPACES		Every strawberry has about 200 seeds on it. **Add 2 points**
94% of U.S. households eat strawberries. **Add 2 points**	You skipped breakfast. **Skip a turn**	Strawberries are the first fruit to ripen in the spring. **Add 3 points**	Ate candy rather than fruit. **Minus 2 points**	Strawberry production in Indiana is on more than 285 acres. **Add 2 points**	START

MOVE **TWO** SPACES

Directions:

1. Cut out strawberries.
2. Place a paperclip in the center of the game board, use a pencil point on the dot to hold the paperclip on the board.
3. Place the strawberries on “Start”.
4. Take turns spinning the paperclip and moving around the board to collect points.
5. Keep track of your points and add them after 3 minutes of play.
6. Play again to increase your strawberry knowledge.

Cut out strawberries:



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STRAWBERRY DNA

Activity from National Agriculture in the Classroom lesson - *DNA: Expression in Agriculture*

MATERIALS NEEDED:

- Frozen strawberries, three per group
  - Frozen strawberries can thaw as students smash them in the Ziploc bag.
  - Fresh strawberries also work well if they are in season and more cost effective.
- Ziploc sandwich bags, one per group
- DNA extracting solution:
  - Make one day ahead so there are no bubbles in the solution.
  - In a gallon container mix:
    - 1/2 gallon (2000 ml) water
    - 1/2 cup (120 ml) clear dish detergent
    - 2 tablespoons (30 ml) salt
- Tablespoon
- Funnels, one per group
- Plastic cups, one per group
- 4" x 4" squares of cheesecloth, two per group
- Graduated test tubes, one per group
- Rubbing alcohol, chilled
- Pipettes, one per group
- Microcentrifuge tubes, one per student
- Yarn, one necklace-length piece per student

DIRECTIONS:

1. Prepare the DNA extracting solution the day before the activity.

2. Divide students into groups of three or four and provide each group with the following materials: Ziploc bag containing 3 strawberries and 3 tablespoons of DNA extracting solution, funnel, plastic cup, 2 squares of cheesecloth, graduated test tube, pipette, test tube, 3–4 microcentrifuge tubes (1 per student), and 3–4 pieces of yarn (1 per student).

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STRAWBERRY DNA

DIRECTIONS:

3. Guide students through the following instructions:
    - Collect your materials.
    - Carefully remove most of the air from the Ziploc bag, and seal it well.
    - Gently mash the strawberries through the bag. Be careful not to break the bag but mix the strawberry mash thoroughly.
    - Place the funnel in the plastic cup. It should sit on the rim of the cup.
    - Place the two squares of cheesecloth into the funnel, forming a layer for straining.
    - Carefully pour the strawberry mixture into the funnel, making sure to catch the solids with the cheesecloth. After filtering the mixture, remove the cheesecloth, and place it into the Ziploc bag for disposal.
    - Add 5 ml of the filtered strawberry extract to the graduated test tube using the funnel. Hold the tube near the top so that the heat from your hand does not affect the extraction.
    - Remove the funnel, and use the pipette to forcefully add 3 ml of the isopropyl or rubbing alcohol to the test tube. Take care not to tilt or tip the test tube; do not mix the two liquids.
    - Observe the line between the strawberry mixture and the alcohol. You will notice a white, thread-like cloud appearing at this line. This is the strawberry DNA. The DNA will clump together and float to the top of the alcohol layer.
    - Holding the tube still, observe the tubes of others around you. Do you notice any differences?
    - Using the pipette, add some DNA strands and some of the alcohol in the test tube to each person's microcentrifuge tube. Repeat steps 6 to 8 if necessary to collect enough DNA for everyone's microcentrifuge tube.
    - Close the cap of the microcentrifuge tube tightly around a piece of yarn and tie the ends of the yarn to make a necklace.
    - Clean up! Dump the remaining strawberry solution where instructed, throw away the Ziploc bags, and collect the cups, test tubes, funnels and pipettes to clean so they can be used again.

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STRAWBERRY JAM RECIPE

INGREDIENTS:

1 pound of sliced strawberries
1 cup granulated sugar
1 ½ tablespoons powered instant pectin

EQUIPMENT:

1 cup measuring cup
⅓ cup measuring cup
1 tablespoon measuring spoon
Large bowl or Zip-Lock bags
Potato masher (optional)
2 (8-ounce) jars or containers (optional)

DIRECTIONS:

1. Mash the strawberries.
    - The goal is to obtain 1 ⅓ cups of smashed strawberries. Have students help mash by placing strawberries in a Zip-Lock bag. Be sure to double bag. You also could use a large bowl and a potato masher until the strawberries reach the desired consistency.

2. Measure out 1 ⅓ cups of smashed strawberries. Place in a Zip-Lock bag or bowl.

3. Add sugar and instant pectin to the smashed strawberries.
    - Carefully open the Zip-Lock bag to add sugar and instant pectin. Seal the bag and begin to mix the strawberries, sugar and instant pectin. Let stand for 30 minutes at room temperature.

4. Fill the jars.
    - Divide the mixture between two 8-ounce jars, leaving at least ¼ inch of room at the top of each jar/container. Tightly seal the jars and leave at cool room temperature out of direct sunlight for 12 hours. Once the jam is set to a "jam" consistency, move the sealed jars to the refrigerator or freezer for long-term storage or leave in the plastic bag for storage.

5. Storage information:
    - The proper thawing procedure is to place the frozen jam into the refrigerator overnight. Refrigerator jam is best used within one week of thawing. Frozen jam can be kept up to one year.

Cut out strawberry shapes

Staple on lines

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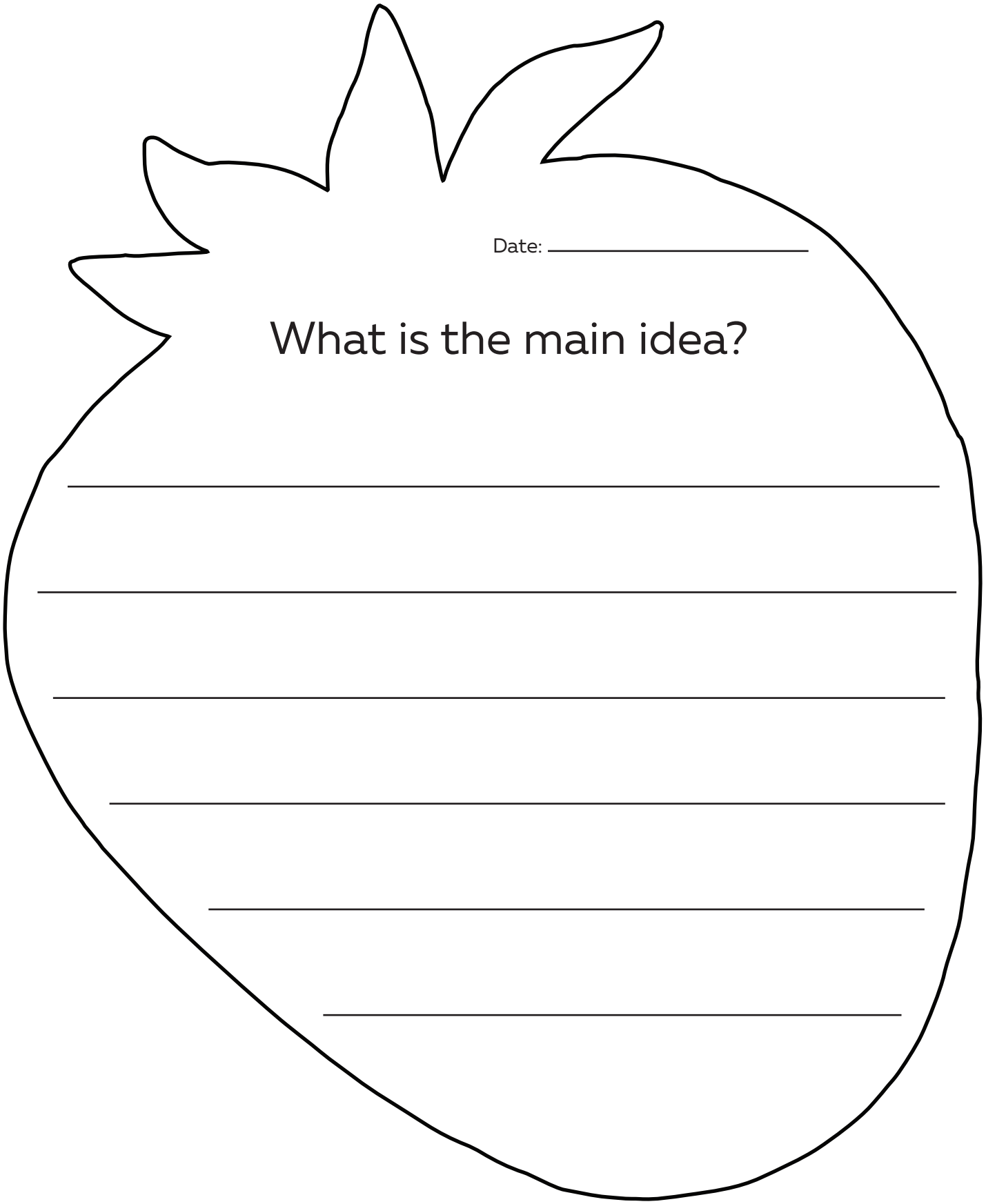
STRAWBERRY JOURNAL

Answer the questions after you have read the book "I LOVE Strawberries!".

Name: _____



Date: _____

What is the main idea?

_____

_____

_____

_____

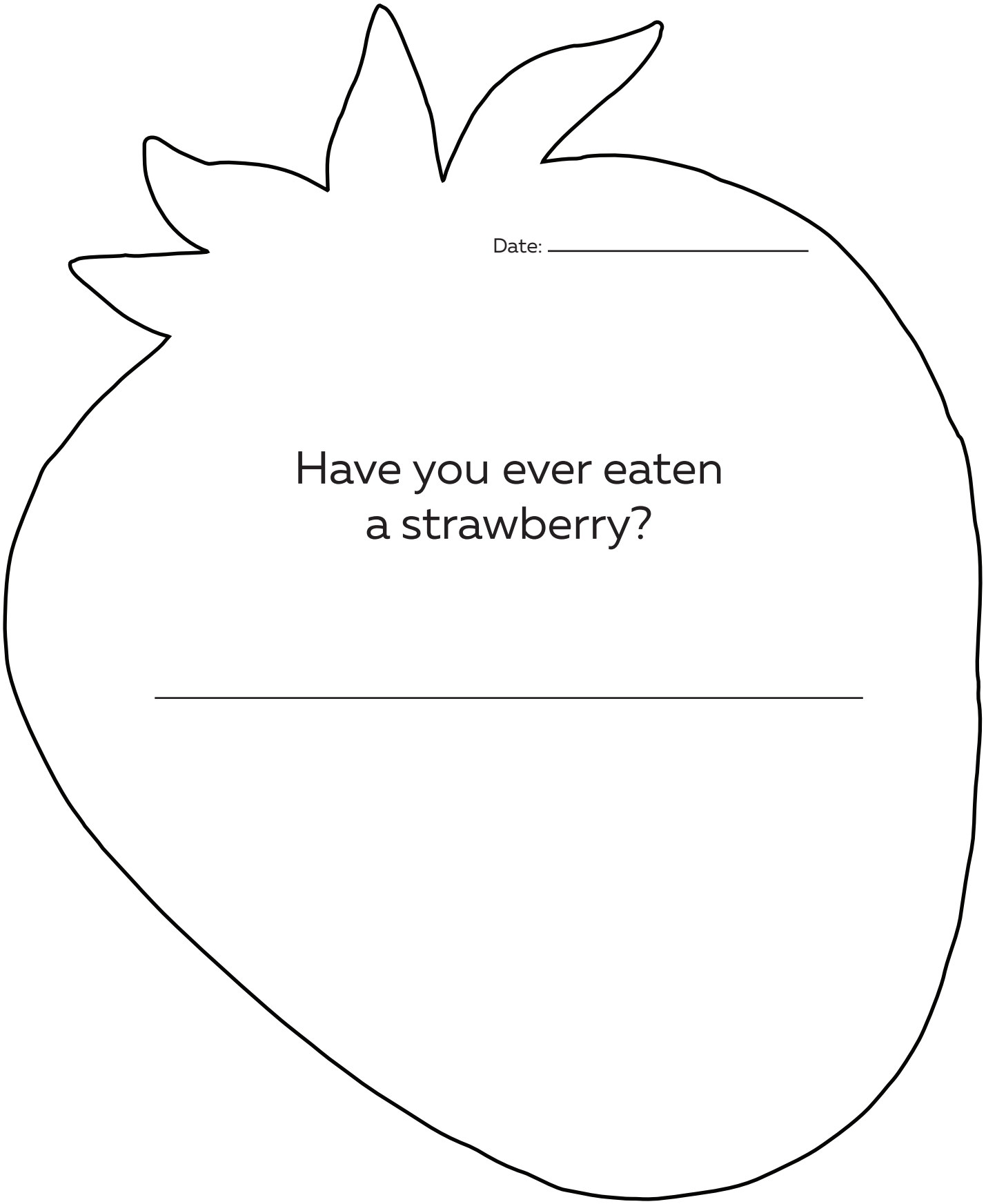
_____

_____

Date: _____

Have you ever visited a strawberry farm?

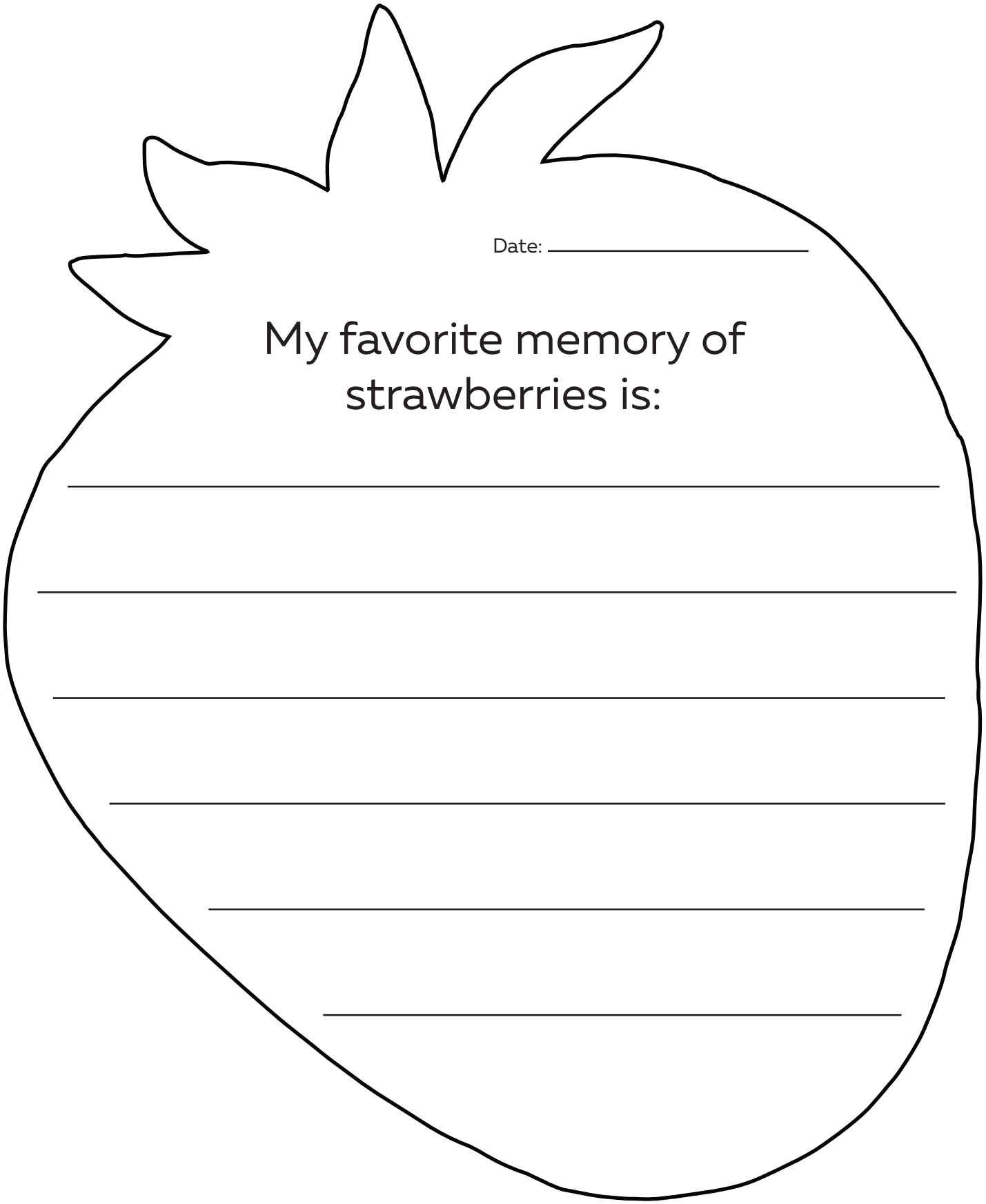
_____



Date: _____

Have you ever eaten
a strawberry?

_____



Date: _____

My favorite memory of strawberries is:

_____

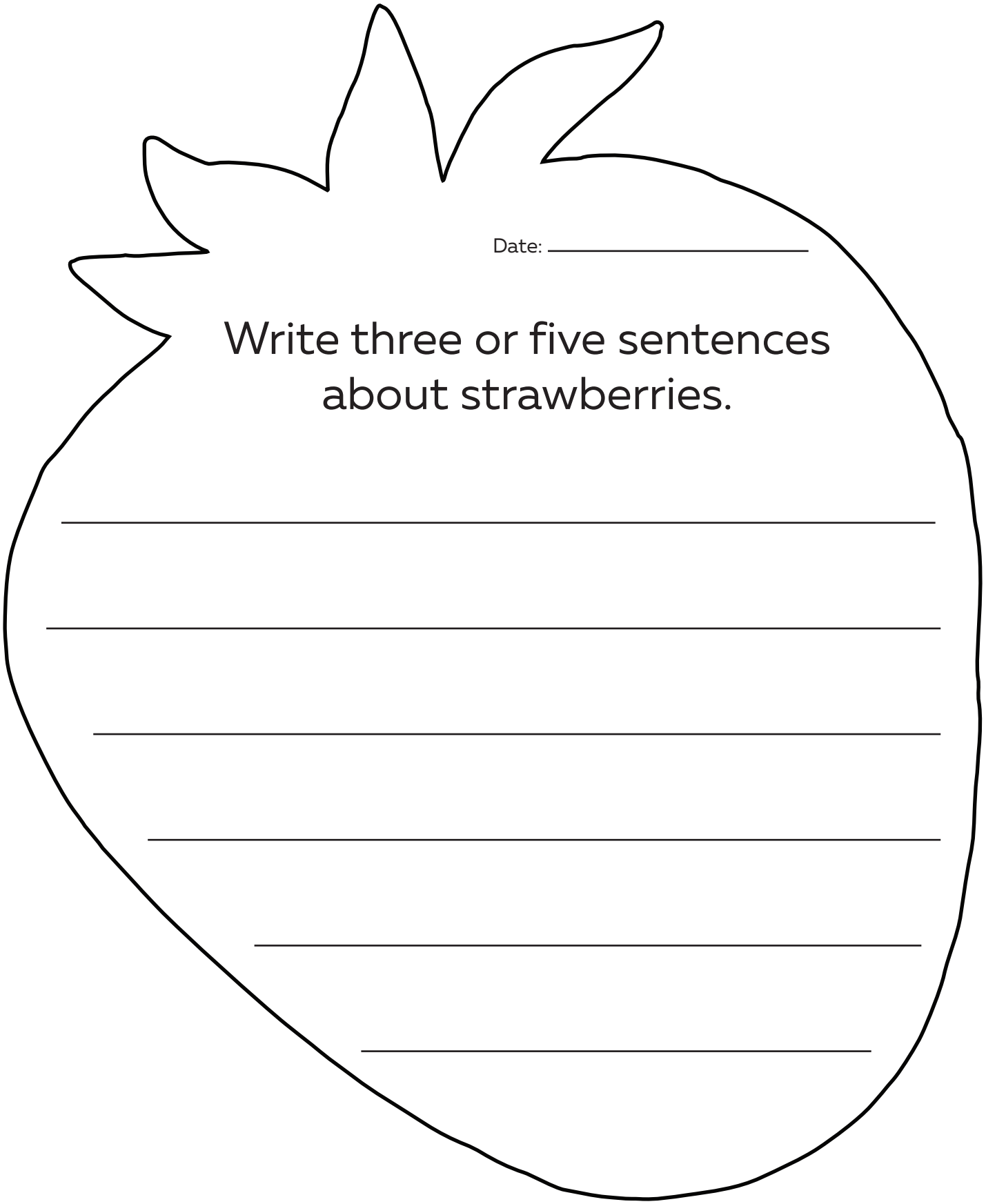
_____

_____

_____

_____

_____



Date: _____

Write three or five sentences about strawberries.

Name: _____

SCOOT RECORDING SHEET

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25
26	27	28	29	30

Name: _____

SCOOT RECORDING SHEET

1 Strawberries	**2** Every day	**3** To look older	**4** Fail	**5** Act older
6 Feed and clean his house	**7** Growing something	**8** Grass seed	**9** To keep grass alive	**10** Munchy
11 Pansies	**12** Not enough money	**13** To make money	**14** Lemonade stand	**15** Six dollars
16 Go shopping	**17** Find a place to plant strawberry plants	**18** 12 strawberry plants	**19** Tiny green strawberries starting to grow	**20** Birds
21 Ladybugs	**22** Grandpa	**23** A whole cup	**24** Pancakes	**25** Act older
26 Runner	**27** Set up a stand and let people pick them	**28** Eight dollars	**29** Blueberries	**30**

1

What did Jolie want to grow?

2

How often did Jolie say she could eat strawberries?

3

Jolie kept a journal – what was her first mission?

4

Did her first mission succeed or fail?

5

What was her second mission?

6

To act older, what did Jolie do for her rabbit, Munchy?

7

What was mission #3?

8

What did she grow?

9

What was mission #4?

10

Who tried to eat the grass?

11

What did they buy at the garden store?

12

Why couldn't mom buy strawberry plants?

13

What was mission #6?

14

How did she make money?

15

How much money did Jolie make?

16

What was Mission #7?

17

What was mission #8?

18

How many strawberry plants did she buy?

19

In May what was the breaking news?

20

What tried to attack her strawberry plants?

21

What bug was helpful to her strawberries?

22

Who did she share her first harvest with?

23

How big was her first harvest?

24

What did Jolie make with her strawberries?

25

What did they do with strawberries so they didn't spoil?

26

What is it called when a strawberry plant bends over and re-plants itself?

27

What did Jolie do when she had so many berries?

28

How much did she make on her first day of you-pick?

29

What plant did Jolie decide she might want to grow next?

30

What is your favorite strawberry treat?