

PLANTS AND PHOTOSYNTHESIS

CUBE CODE

STATION 2:
First, number ALL the paragraphs on your reading passage. Then, read each statement below and determine which paragraph NUMBER the statement can be found in. Lastly, eliminate ANY answer where the answer was found in an EVEN numbered paragraph, leaving only ODD numbers as your final code (in the order of questions). Paragraph numbers MAY be used more than one time or not at all.

STATION 3:
Read each statement below and determine if it is true or false. If the statement is true, color or shade the coin that corresponds to the question. If the statement is false, cross out that coin value. After you are finished add the TOTAL of ALL TRUE coin values. The code has been provided for you. If the total is 625, a 6 in the first box, the 2 in the second box and so on.

PLANTS AND PHOTOSYNTHESIS
Plants are living organisms that need food in order to survive. Unlike humans and animals who must consume other things, plants are known as autotrophs because they make their own food source through a process called photosynthesis. Photosynthesis is made up of the words photo, meaning light, and synthesis meaning putting together. Through this process, energy is taken from sunlight and used to convert water and carbon dioxide into plant food and oxygen. This process is vital for humans and other living organisms and without it, the earth and its inhabitants would not be able to survive.
In 1771, Joseph Priestley began the study of photosynthesis by burning a candle in a closed container. He then placed a mint sprig inside the container and observed that the mint produced oxygen.

THINK TANK

QUESTIONS:
1. The first stage of photosynthesis is known as?
A. Garlic clove
B. Mint sprig
C. Onion peel
D. None of the above

2. What absorbs bluish-green light?
A. Carotenoids
B. Phycobilins
C. Cyanobacteria
D. All of the above

3. How many main steps does the Calvin Cycle have?
A. 4
B. 6
C. 8
D. 10

4. The photosynthesis process on land amounts to what percent of the world's oxygen?
A. 10%
B. 30%
C. 50%
D. 70%

5. The year the Calvin Cycle was discovered MINUS 1954.
The FIRST number of the lock is the percent of the world's oxygen phytoplankton in the sea produces MINUS 61.
The THIRD number of the lock is the year Joseph Priestley began the study of photosynthesis MINUS 1770.

6. This process of photosynthesis occurs in ____ stages.
The first stage requires sunlight. The second stage is the light dependent reactions (LDR), which converts light energy from the sun into chemical energy. The third stage is the Calvin cycle, which converts carbon dioxide and water into glucose and oxygen.

7. eight
8. chloroplasts
9. pistils

10. 1923
11. sunlight
12. 1957

13. six
14. energy
15. two

COIN VALUES:
A 75
B 25
C 50
E 100
F 75
G 50
H 25
I 100

4 DIGIT CODE: [] [] [] []

STATION 1:

Use your reading passage or deductive reasoning skills to determine the missing words in the paragraph below. Each missing word has a corresponding NUMBER. The 4-digit code will be the NUMBER of each missing word in the same order in which they appear in the paragraph.

STATION 2:

First, number ALL the paragraphs on your reading passage. Then, read each statement below and determine which paragraph NUMBER the statement can be found in. Lastly, eliminate ANY answer where the answer was found in an ODD numbered paragraph, leaving only EVEN numbers as your final code (in the order of questions). Paragraph numbers MAY be used more than one time or not at all.

STATION 3:

Read each statement below and determine if it is true or false. If the statement is true, color or shade the coin that corresponds with that question. If the statement is false, cross out that coin value. When you are finished add the TOTAL of ALL TRUE coin values. One digit of the code has been provided for you. If the total is 625, a 6 would go in the first box, the 2 in the second box and so on.

STATION 4:

Use your reading passage to determine the combination to the 4-digit lock. You're going to have to use your critical thinking skills and do a tiny bit of math. Pay attention because the "clues" below are NOT in order.

STATION 5:

Answer each multiple choice question below. Then, count the number of times you used each letter answer (ABCD) to reveal your 4 digit code. Answer options may be used more than once or not at all. If a letter option is not used, simply put a zero in the box.

STATION 6:

Reread the passage and write the main idea in your own words. Then, add TWO supporting details that back up your main idea or topic sentence.

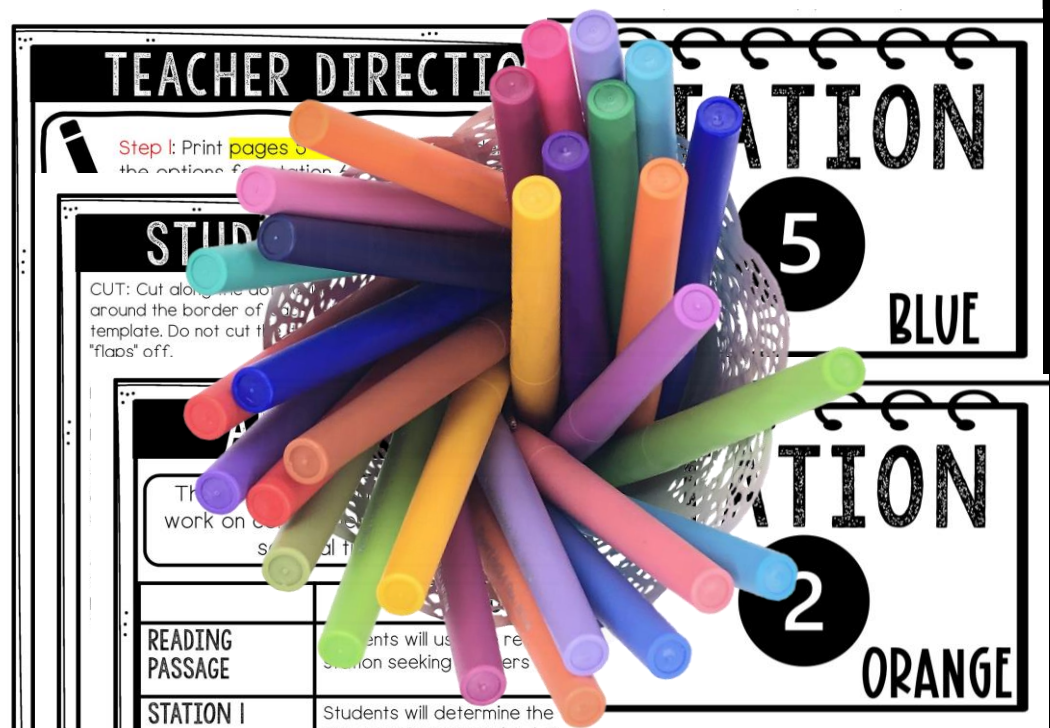
STATION

1

RED

WHAT'S INCLUDED?

- READING PASSAGE
- 6 STATIONS
- TEACHER GUIDE
- STATION CARDS
- ANSWER KEY
- STUDENT DIRECTIONS
- TEXT MARKING OPTION
- ALTERNATE STATION
- ASSEMBLY TIPS



6 STATIONS

STATION 1:

Use your reading passage or deductive reasoning to determine the missing words in the paragraph below. The missing word has a corresponding NUMBER. The 4-digit code will be the NUMBER of each missing word in the same order in which they appear in the paragraph.

1	six	4	1923	7	eight
2	energy	5	sunlight	8	chloroplasts
3	two	6	1957	9	pistils

This process of photosynthesis occurs in _____ structures. The first stage requires _____ energy from the sun is absorbed by chemical molecules and takes place in the second stage. Sunlight is used. The Calvin cycle has four main steps.

STATION

1

RED

STATION 6:

Reread the passage and write the main idea in your own words. Then, add TWO supporting details that back up your main idea or topic sentence.

MAIN IDEA

STATION

6



SUPPORTING DETAIL #2

STATION 4:

Use your reading passage to determine the combination to the 4-digit lock. You're going to have to use your critical thinking skills and do a tiny bit of math. Pay attention because the "clues" below are NOT in order.

The LAST number of the lock is the number of pigments plants possess MINUS 1.

The SECOND number of the lock is

STATION

4

GREEN

4 DIGIT CODE

STATION 5:

Answer each multiple choice question below. Then, count the number of times you used each letter answer (ABCD) to reveal your 4 digit code. Answer options may be used more than once or not at all. If a letter option is not used, put a zero in the box.

What is the first stage of photosynthesis known as?

- A. RDA
- B. ATP
- C. PLR
- D. LDR

What did Joseph Priestley place in the container with the candle?

- A. Garlic clove
- B. Mint sprig

STATION

5

BLUE

The absorption of light is carried out by the plant called _____.

- A. Xylem
- B. Chloroplast
- C. LDR
- D. Mitochondria

The photosynthesis rate on land is _____ percent of the world's oxygen.

- A. 10%
- B. 30%
- C. 50%
- D. 70%

- A. 4
- B. 6
- C. 8
- D. 10

A B C D

STATION 3:

Read each statement below and determine if it is true or false. If the statement is true, color or shade the coin that corresponds to the question. If the statement is false, do not color or shade it. One coin has been finished. The 4-digit code has been revealed. The first box is empty.

STATION

3

YELLOW

A
75

B
25

C
50

D
100

- C. Chlorophyll traps light and produces green pigment.
- D. Phloem transports and distributes the nutrients and sugar.
- E. Glucose, a form of sugar, is produced.
- F. Photosynthesis happens very slowly in almost every plant.
- G. Leaves have tiny holes called stomata and mesophyll cells.
- H. Without plants, there would not be enough oxygen for many animals to live.

4 DIGIT CODE

STATION 2:

First, number ALL the paragraphs on your reading passage. Then, read each statement below and determine which paragraph NUMBER the statement can be found in. Lastly, eliminate ANY answer where the answer was found in an EVEN numbered paragraph, leaving only ODD numbers as your final answer. Paragraph numbers may be used more than once.

STATION

2

ORANGE

A

B

C

D

E

F

G

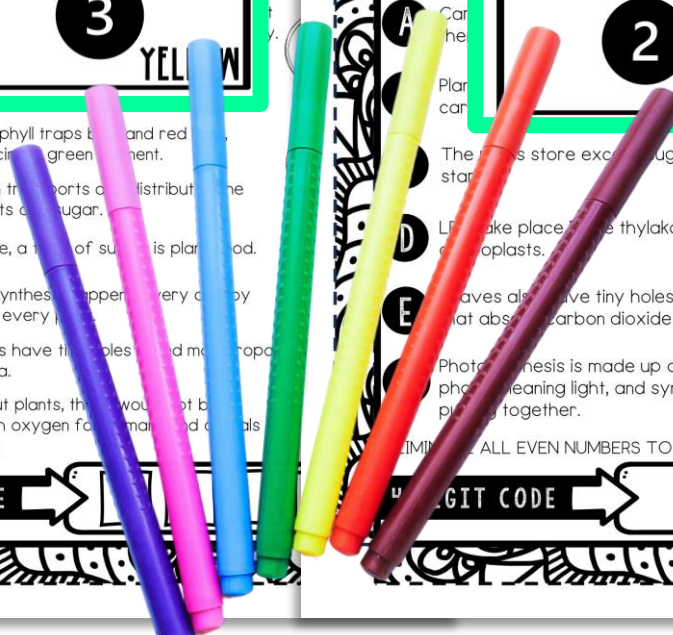
H

I

J

ELIMINATE ALL EVEN NUMBERS TO DETERMINE THE FINAL CODE.

4 DIGIT CODE



SAMPLE CUBE




STATIONS

STATION 1	Students will determine the missing words in the paragraph to reveal a 4 digit code.
STATION 2	Students will number the paragraphs and browse the passage to determine where the answers can be found (paragraph number). After eliminating EVEN numbers, a 4 digit code will be revealed.
STATION 3	Students will read each statement and determine if it is true or false. They will then ADD all TRUE values to find the 4 digit code.
STATION 4	Students will do some basic math here, read the passage to find the answers and then determine the 4 digit code.
STATION 5	Students will answer 6 multiple choice questions which lead them to a 4 digit code based on the number of times they used each "answer".
STATION 6	Option 1: Main idea writing activity Option 2: Color and add topic
TEXT MARKING	OPTIONAL: A color code chart is included in case you want students to mark the text citing evidence of where they found their answers.

**STUDENTS WILL
USE THE SAME
READING
PASSAGE AT
EACH STATION
SEEKING
ANSWERS AND
TEXT EVIDENCE.**

HOW IT WORKS



ENGAGING READING COMPREHENSION PRACTICE!

1

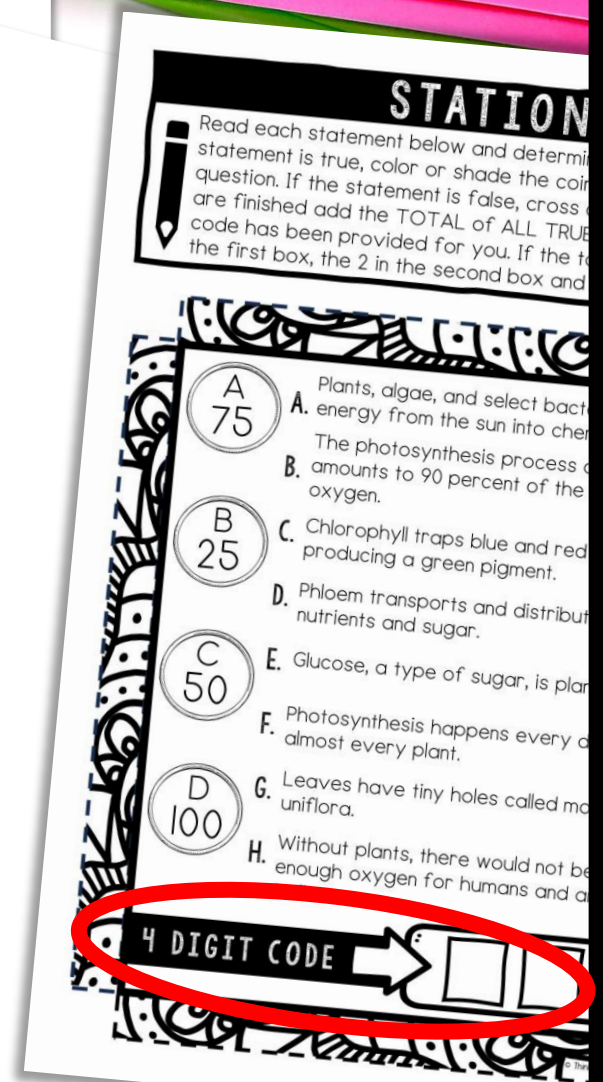
Students work individually (or in pairs) and visit 6 stations, grabbing one side of their cube at each station.

2

Students will answer the questions (found directly in the passage) on their cube sheet before assembly. Students will revisit their reading passage at EACH station!

3

Students will reveal 4-digit codes to move on to the next station. When they finish all stations, they can color and assemble their cube.



STATION

Read each statement below and determine if the statement is true, color or shade the corresponding question. If the statement is false, cross it out. When you are finished add the TOTAL of ALL TRUE statements. A code has been provided for you. If the total is 75, the 1 in the first box, the 2 in the second box and so on.

A 75

A. Plants, algae, and select bacteria convert energy from the sun into chemical energy.

B 25

B. The photosynthesis process converts carbon dioxide and water into glucose and oxygen. The oxygen amounts to 90 percent of the oxygen in the atmosphere.

C 50

C. Chlorophyll traps blue and red light and reflects green, producing a green pigment.

D 100

D. Phloem transports and distributes nutrients and sugar.

E. Glucose, a type of sugar, is produced during photosynthesis.

F. Photosynthesis happens every day in almost every plant.

G. Leaves have tiny holes called stomata that allow for gas exchange.

H. Without plants, there would not be enough oxygen for humans and animals to survive.

4 DIGIT CODE →

COMBINATION



Each Cube Code is a winning combination of:


- stations and movement
- close reading
- comprehension skills
- coloring and stress relief
- secret codes
- cut and paste
- citing evidence
- critical thinking

Everything a teacher dreams of wrapped up into one FUN and engaging activity!

BENEFITS



THINK OUTSIDE THE BOX!

-  ANTICIPATORY SETS
-  UNIT REVIEW
-  EARLY FINISHERS
-  STATIONS
-  SUB PLANS
-  PARTNER WORK
-  ENRICHMENT

-  HANDS-ON
-  CROSS-CURRICULAR
-  HIGHLY ENGAGING

