

Heredity

For Review or Assessment

CRACK The CODE

Question I
If a tall (TT) pea plant is crossed with a short (tt) pea plant, which of the following could be a genotype of the offspring?

TT	Sad
Tt	Excited
tt	Angry

Question II
A black chicken is crossed with a white chicken. Which of the following is NOT a possibility?

A black chicken	Happy
A homozygous dominant chicken	Scared
A white chicken	Shocked

Question III
In guinea pigs, short hair is dominant (S) and long hair is recessive (s). If a heterozygous parent (Ss) is crossed with a homozygous recessive parent (ss), which of the following would NOT be possible for the offspring?

Ss
Ss
ss

I CRACKED The Heredity CODE

CODE: _____

Use the cipher above to determine the code that unlocks your next challenge.

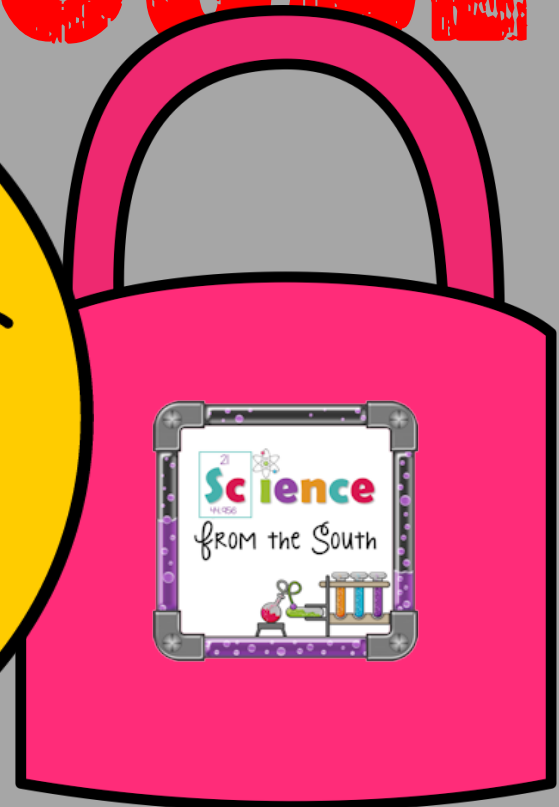
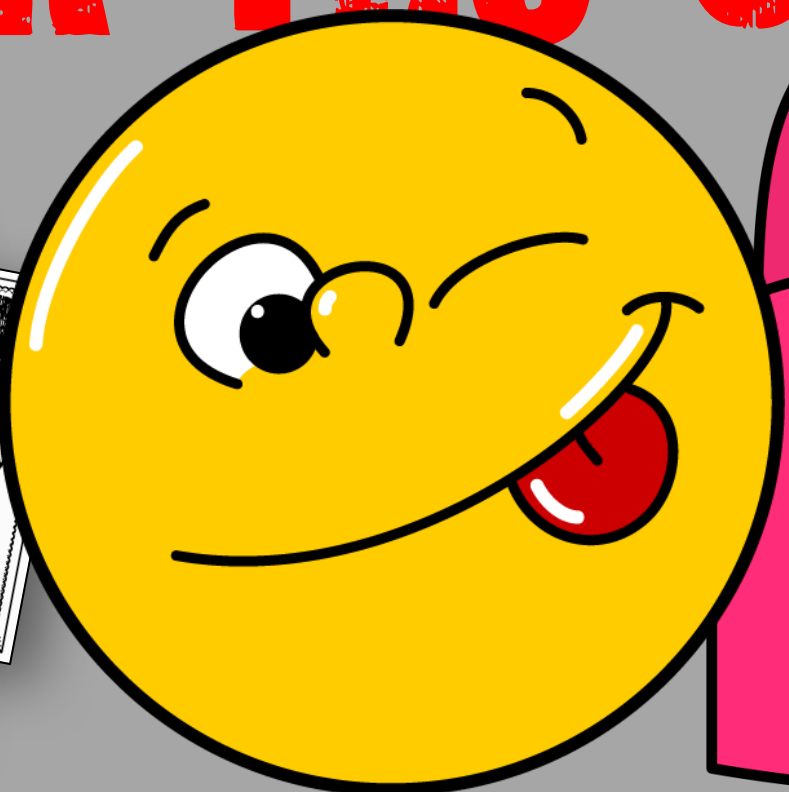


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Question 1

Which of the following terms refers to a variation of a trait?

- A. Gene
- B. Allele
- C. Phenotype
- D. Genotype

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Question 2

Which of the following represents an allele?

- E. B
- F. b
- G. BB
- H. Bb
- I. Bb
- J. Both E and F represent alleles



Question 3

Which of the following represents a phenotype?

- Q. Homozygous dominant
- R. Heterozygous
- S. Homozygous recessive
- T. Curly
- U. Cc



Question 4

Which of the following terms would be used to describe a genotype of gg?

- V. Homozygous dominant
- W. Heterozygous
- X. Homozygous recessive
- Y. Green



Question 1

Which of the following represents a homozygous dominant genotype?

- T 
- t 
- TT 
- Tt 
- tt 

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Question 2

In pea plants, yellow seeds are dominant to green seeds. Which of the following could be a genotype of a plant with green seeds?

- GG
- Gg
- gg
- Both GG and Gg



Question 3

In guinea pigs, brown coat color is dominant to white. A white guinea pig would have a ____ genotype.

- Homozygous dominant 
- Heterozygous 
- Homozygous recessive 



Question 4

Which of the following represents a heterozygous genotype?

- Hh
- Oo
- Pp
- All of the above



Question 1

In humans, freckles are dominant to no freckles. Which of the following phenotypes would be expressed if an individual has a heterozygous genotype?

- A. Freckles
- B. No freckles
- C. Need more information to determine

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Question 2

In pea plants, tall plants are dominant to short plants. A plant with a homozygous recessive genotype will be ____.

- F. Tall
- G. Short
- H. Medium height



Question 3

In mice, brown hair is dominant to tan hair. A mouse with a homozygous dominant genotype will have ____ hair.

- J. Brown
- K. Tan
- L. White



Question 4

In pea plants, smooth pods are dominant. A plant with a genotype represented by ss, will have ____ pods.

- M. Smooth
- N. Bumpy



Question 1

Parent 1 has a homozygous dominant genotype. Parent 2 has a heterozygous genotype. Which of the following represents the genotype of parent 2?

☐ RR
☒ Rr

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Question 2

In a flowering plant, red flowers are dominant to white flowers. If a homozygous dominant and a heterozygous flower are crossed, which of the following is a possible genotype for the offspring?

☐ RR
☒ rr



Question 3

In pea plants, purple flowers are dominant to white flowers. True or False: If a heterozygous pea plant, and a plant with white flowers is crossed, homozygous dominant is a possible genotype of the offspring.

☒ True
☐ False



Question 4

In rabbits, grey fur is dominant to white fur. True or False: A cross between a homozygous dominant rabbit and a white rabbit, would produce offspring with a heterozygous genotype.

☐ True
☒ False



Question 1

If a tall (TT) pea plant is crossed with a short pea plant, which of the following could be a genotype of the offspring?

TT	Sad
Tt	Excited
tt	Angry

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Question 2

In some chickens, black feathers are dominant to white feathers. In a cross between a homozygous dominant chicken and a heterozygous chicken, which of the following is NOT a possibility?

A black chicken	Happy
A homozygous dominant chicken	Scared
A white chicken	Shocked



Question 3

In guinea pigs, short hair is dominant to long hair. In the cross between a heterozygous guinea pig and a guinea pig with long hair, which genotype would NOT be possible in the offspring?

SS	Sad
Ss	Silly
ss	Worried



Question 4

In sheep, belly fur (B) is dominant to no belly fur. Parent 1 is heterozygous for belly fur. Parent 2 does not have belly fur. Would it be possible for the offspring to have no belly fur?

Yes	Angry
No	Scared



Question 1

In sheep, white (W) wool is dominant to black wool. Parent 1 is homozygous dominant for wool color. Parent 2 is heterozygous. What percentage of the offspring from this cross will likely be black?

- A. 100% C. 50%
B. 0% D. Need more information

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Question 2

In some seals, long whiskers (L) are dominant to short whiskers. Which of the following ratios best describes the results that would occur from the cross of two seals with short whiskers?

- F. 2 Ll: 2 ll
G. 4LL: 0ll
H. 0 long whiskers: 4 short whiskers



Question 3

In some tulips, red tulips (R) are dominant to pink (r) tulips. If two heterozygous tulips are crossed, what fraction of the offspring will be red?

- J. $\frac{3}{4}$
K. $\frac{1}{2}$
L. $\frac{1}{4}$
M. All of the offspring will be red



Question 4

In some pine trees, short (S) needles are dominant to long needles. In the cross between two heterozygous plants, what are the possible genotypes?

- N. Ss
O. Ss, ss
P. SS, Ss, or ss



Question 1

In some cats, long hair is dominant to short hair. In a cross of two cats, 50% of the offspring have long hair and 50% have short hair. Which of the following most likely represents the genotypes of the parents?

- A. $LL \times Ll$
- B. $LL \times ll$
- C. $Ll \times ll$

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Question 2

In some plants, red flower color is dominant to white flower color. If all of the offspring from a cross produce white flowers, which of the following would most likely be the genotypes of the parents?

- E. $RR \times RR$
- F. $Rr \times Rr$
- G. $rr \times rr$



Question 3

Many individuals are capable of rolling their tongue (**R**). However, there are a few that are not able to do so. If a mother and a father have children that are NOT able to roll their tongue, which of the following could NOT be the genotype of the father?

- R. RR
- S. Rr
- T. rr



Question 4

In humans, free ear lobes are dominant to attached ear lobes. A mother and a father have a family of 10 kids. Seventy-five% of the kids have free ear lobes while 25% have attached. Which of the following most likely represents the genotypes of the parents?

- V. $Ff \times Ff$
- W. $FF \times Ff$
- X. $ff \times ff$



Heredity Crack the Code Answer Sheet

Name(s): _____

Place: _____

Heredity Crack the Code Answer Sheet

Name(s): _____

Place: _____

Heredity Crack the Code Answer Sheet

Name(s): _____

Place: _____

Heredity Crack the Code Answer Sheet

Name(s): _____

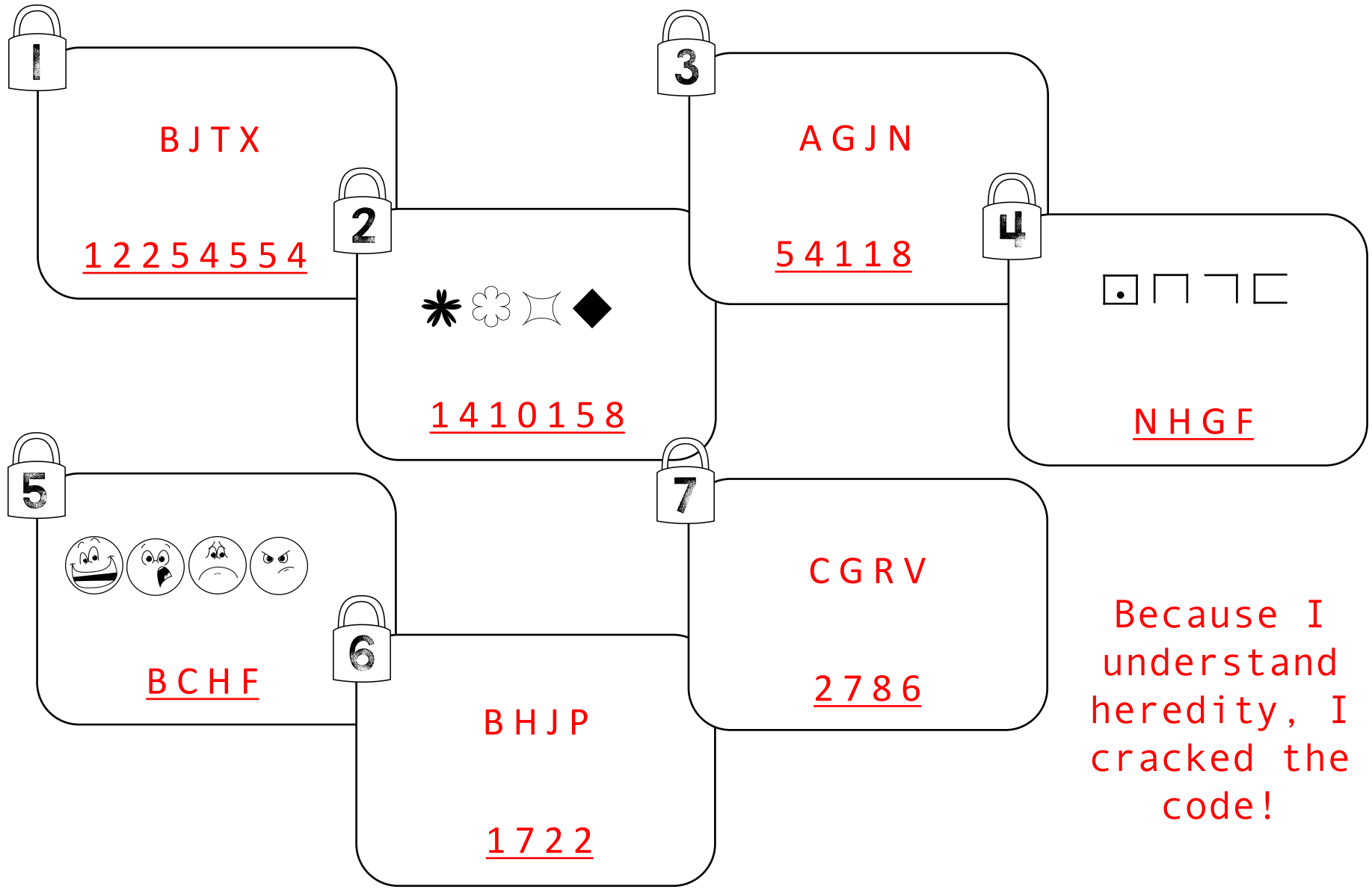
Place: _____

Heredity Crack the Code Answer Sheet

Name(s): _____

Place: _____

Heredity **CrACK The CoDe** **KEY**



How To Crack the Code

1

Identify the corresponding letter of the correct answer to the question. Find the letter on the grid. Identify the number to the left and the top of the grid space. Use the sequence of numbers that correspond to the answer choices to crack the code.

2

Select the correct answer to the question. Find the pattern that corresponds to your answer choice in the chart. Use the sequence of numbers that correspond to your answers to crack the code.

3

Find the letter of your answer choice. Follow the path to a number. Use the sequence of numbers that correspond to your answer choices to crack the code.

4

Select the correct answer to the question. Find the pattern that corresponds to your answer on the diagram. Use the sequence of letters identified by the pattern to crack the code.

5

Select the answer that will correctly complete the statement. Match up the emotion with its corresponding illustration. Use the sequence of letters identified by the illustration to crack the code.

6

Find the maze with the letter of your answer choice. Follow the path to a number. Use the sequence of numbers that correspond to your answer choices to crack the code.

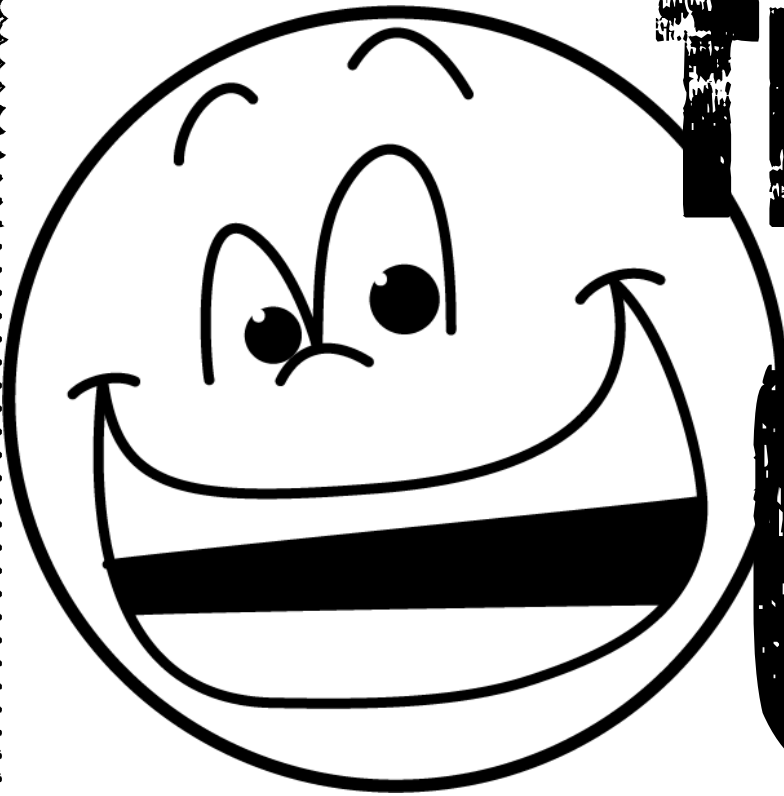
7

Identify the sequence of letters that correspond to the correct answers to the questions. Beginning in the START block, follow the sequence of letters and arrows. Continue to follow the arrows to crack the code and complete the challenge.

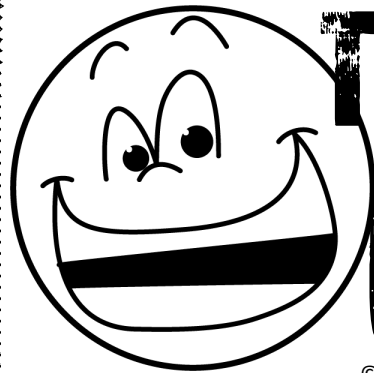
I CRACKED

THE Heredity

CODE



I **CRACKed**



THE Heredity
CODE

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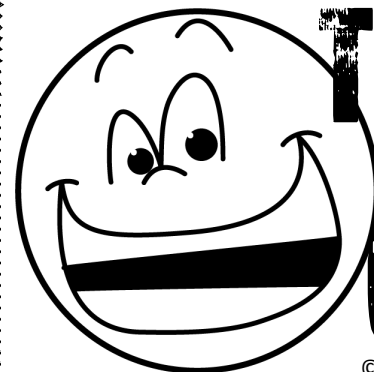
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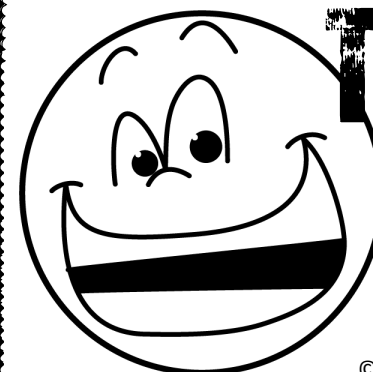
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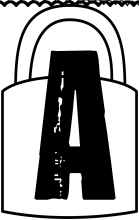
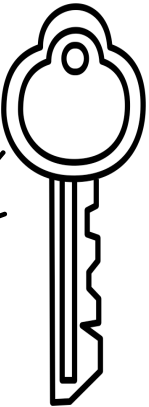
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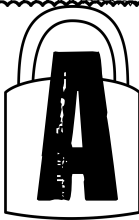
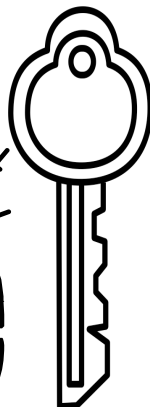


THE Heredity
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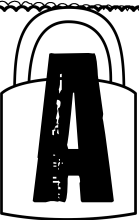
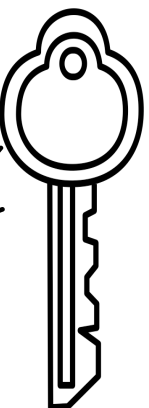
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I **CR**  **ACKed**
THE *Heredity*  **ESCAPED!** *And*
CODE

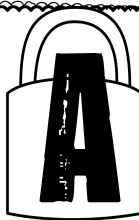
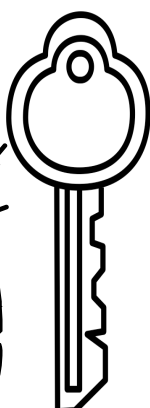
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I **CR**  **ACKed**
THE *Heredity*  **ESCAPED!** *And*
CODE

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Teacher's Notes:

Use this resource to review or assess your students' understanding of heredity.

- Give each student group one of the following links:
 - <https://goo.gl/forms/6I0t5BezKAhv1AS43>
 - <http://bit.ly/2FcMmH1>
- Just print and use the questions cards as is or cut for task cards.
- Place question cards/task cards around the room or print sets for each student group.
- Give all of the questions at the beginning of the challenge or after each code is cracked.
- The students use the answers to the questions to crack the codes. Codes are typed into the digital form by the students. Correct codes unlock the next cipher.
- When the last code (7) is cracked, the students will be instructed to write the phrase "Because I understand heredity, I cracked the code!" on the answer sheet and turn in to you as the teacher. You may use the answer sheet to record which student groups completed the crack the coded activity and the order in which they completed it.
- Differentiate by challenging groups to solve the puzzles without the *How To Crack the Code* sheet
- Award completers with a certificate
- Use the key for an escape the classroom challenge
- Print and go or print, cut, and go!
- Very little prep for student engagement

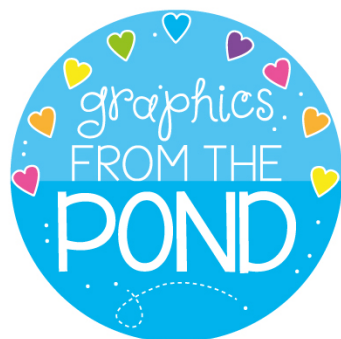
Let's Connect!



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C★R★E★D★I★T★S

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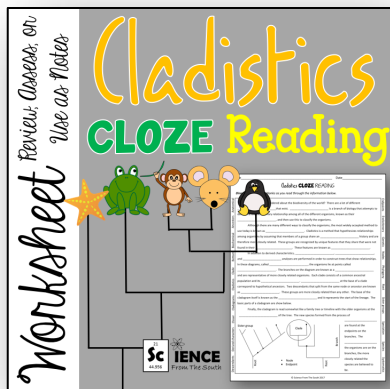


Check out [Science From The South](#) for other interactive assessments and assignments!

Worksheet Review, Assess, or Use as Notes

Cladistics

CLOZE Reading

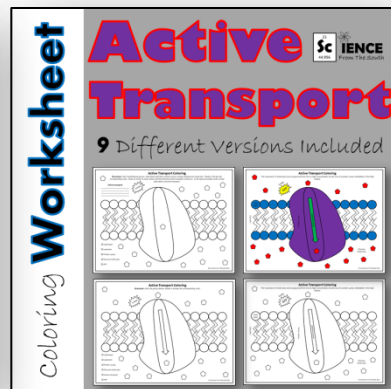


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Coloring Worksheet

Active Transport

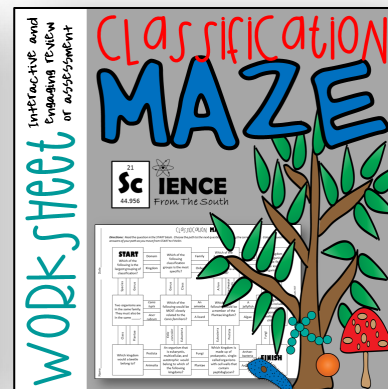
9 Different Versions Included



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Worksheet Interactive and Engaging Review or Assessment

Classification MAZE

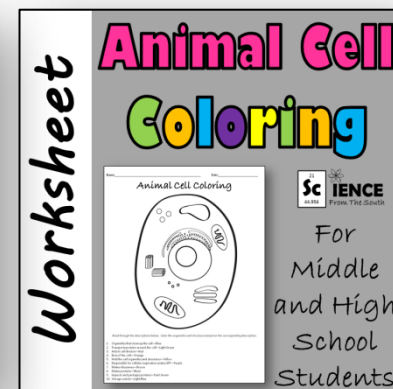


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Worksheet

Animal Cell Coloring

For Middle and High School Students

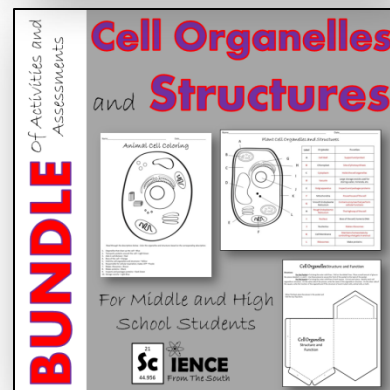


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BUNDLE Of Activities and Assessments

Cell Organelles and Structures

For Middle and High School Students

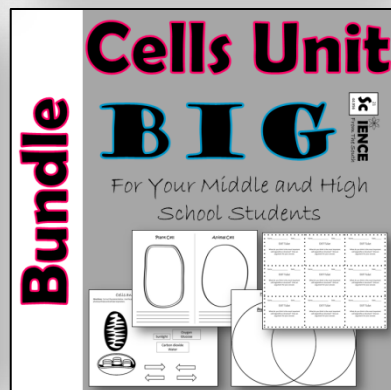


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Bundle

Cells Unit BIG

For Your Middle and High School Students

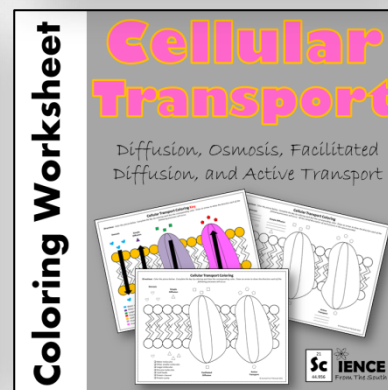


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Coloring Worksheet

Cellular Transport

Diffusion, Osmosis, Facilitated Diffusion, and Active Transport



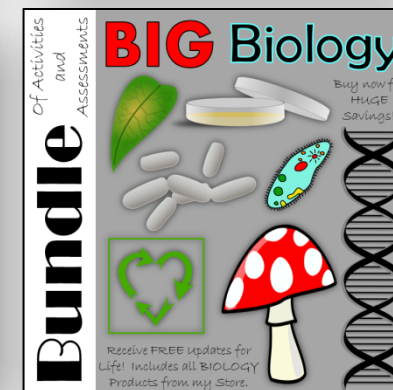
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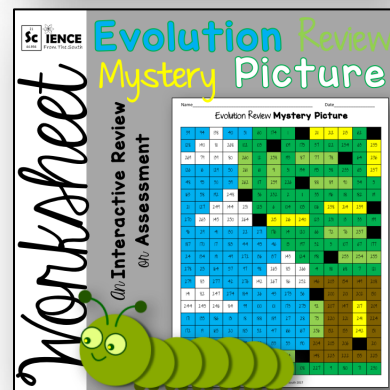
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Worksheet (An Interactive Review or Assessment)

Evolution Review Mystery Picture

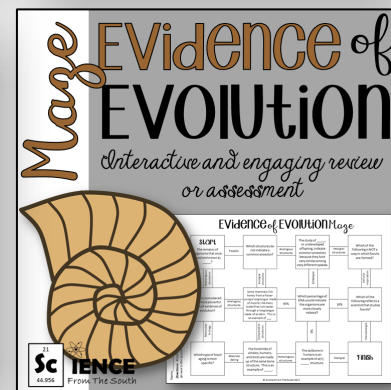


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Maze

Evidence of EVOLUTION

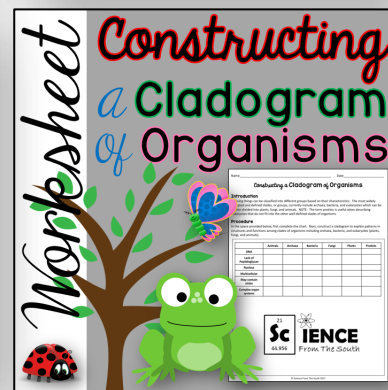
Interactive and engaging review or assessment



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Worksheet

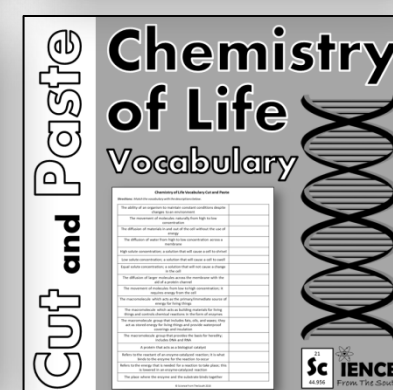
Constructing a Cladogram of Organisms



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Cut and Paste

Chemistry of Life Vocabulary



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