Escape Room EDU
Teacher Instructions

Print out question cards and decoder cards for each level

*Important Note*: The final level (Level 5) comes in two versions (Normal or Hard). Use either one, both end with the same code. The digital escape room uses the normal difficulty only.

Make copies of the recording sheet for each student or group

Print answer key to check student answers

Digital Escape Room

Digital Escape room: http://bit.ly/2m8PRTt

Students will receive a completion code when they have successfully broken out
Escape Room EDU
How to Use

Escape Room for Teams:
Version 1: Place each level at different stations – Requires each team to cycle at predetermined times
Version 2: Place all levels at each station – Requires students to remain at one station

Escape Room for Individual Students:
Place levels around the room for students to answer. Students receive the completion code from teacher when all 5 levels are completed

Optional:
Hide the cards throughout the room to make the game extra challenging
Use physical boxes and locks to make the game feel more “real”
FAQ

My school’s internet does not allow me to use shortened links.
Long Link:
https://docs.google.com/forms/d/e/1FAIpQLSeGLhngVxPHjlpngxqY7ofhz5sb
bpw6MHB6ndkAriWf511ONQ/viewform

How can I see what they did based off the Google form?
Answer: You can’t. Students must input the correct answer to move on. The completion code is used to know when they have completed it.

How long does this take to complete?
Answer: Usually about 45 minutes, sometimes up to an hour, which can be broken into two class periods

Are electronic devices needed to complete this activity?
Answer: No, this can be done without a device

Does this require Google Classroom?
Answer: No, just access to the internet

How long does this take to set up?
Answer: Hardly any time at all; just print the Question cards, Level cards and recording sheet, the Google form is already ready to use
Mission Objective

Using a special laser beam, your class has been shrunken down to enter and explore a dividing cell. However, in order to grow back to normal size, everyone must be located outside of the cell. You must use your knowledge of mitosis and meiosis to escape the cell. Answer the questions at each level and be sure to record each answer. Once all four questions have been answered, use the decoder to progress to the next level. You must hurry to escape the cell before your entire class stays small forever!

Identify this stage of mitosis:

A. Prophase
B. Metaphase
C. Anaphase
D. Telophase
**Q1**

Which is correct about the difference between mitosis and meiosis?

A. Mitosis results in 2 cells, meiosis in 4  
B. Mitosis only occurs in sex cells  
C. Meiosis produces identical cells  
D. Meiosis cells divide once

**Q2**

What are the set of microtubules which move to opposite ends of the cell to aid in cell division called?

A. Centrosomes  
B. Chromosomes  
C. Centromeres  
D. Centrioles

**Q3**

Which of the following does not occur during Prophase in mitosis?

A. Chromosomes coil up  
B. Centromeres divide  
C. Nuclear envelope dissolves  
D. Spindle fibers form

**Q4**

What are the two resulting cells formed from a single cell called?

A. Brother cells  
B. Sister cells  
C. Daughter cells  
D. Parent cells
What types of genetic information must be copied for the next generation of cells?

A. Deoxyribonucleic acid  
B. Ribonucleic acid  
C. Enzymes  
D. Proteins

During which stage of mitosis do chromosomes separate?

A. Prophase  
B. Metaphase  
C. Anaphase  
D. Telophase

Which of the following does not occur during Telophase?

A. Nuclear envelope forms  
B. Chromosomes uncoil  
C. Spindle fibers dissolve  
D. Chromosomes begin to move toward opposite poles

The protein fibers that extend from centrioles and attach to chromosomes to pull them apart are called

A. Cilia  
B. Spindle fibers  
C. Kinetochore  
D. Flagella
Which is true regarding both mitosis and meiosis?

A. Both occur in only animal cells
B. All organisms go through both mitosis and meiosis
C. They are both involved in cell division
D. None of the above

Which correctly pairs this structure with what it's made from?

A. Chromosome: DNA & Protein
B. Centriole: DNA & Protein
C. Centromere: Protein & Fat
D. Centriole: DNA & Sugar

Which of the following does not occur during Anaphase?

A. Centromeres divide
B. Chromosomes move towards opposite poles
C. Spindle fibers pull on the chromosomes
D. Nuclear envelope dissolves

Which of the following undergo meiosis?

A. Liver cells
B. Sperm cells
C. Unicellular organisms
D. All of the above
Which of the following is not true about meiosis?

A. Final cells have half of the DNA  
B. More complex than mitosis  
C. Muscle cells reproduce in this way  
D. Requires a male and a female to reproduce

What is the exchange of genes between homologous chromosomes called?

A. Crossing over  
B. Independent assortment  
C. Criss-Crossing  
D. Meiosis

What is the random distribution of chromosomes during meiosis called?

A. Genetic variation  
B. Recombination  
C. Crossing over  
D. Independent Assortment

Which is correctly matched with the appropriate number of chromosomes in each daughter cell?

A. Meiosis: 2 sets of 23 chromosomes  
B. Meiosis: 1 set of 23 chromosomes  
C. Mitosis: 1 set of 23 chromosomes  
D. Mitosis: 2 sets of 46 chromosomes
Make Your Escape!
Mitosis and Meiosis

Name ____________________

Digital Link: bit.ly/2m8PRTt

Level 1

Q1  Q2  Q3  Q4
Digit 1  Digit 2  Digit 3  Digit 4

Level 2

Q1  Q2  Q3  Q4
Digit 1  Digit 2  Digit 3  Digit 4

Level 3

Q1  Q2  Q3  Q4
Digit 1  Digit 2  Digit 3  Digit 4

Level 4

Q1  Q2  Q3  Q4
Digit 1  Digit 2  Digit 3  Digit 4

Level 5

Q1  Q2  Q3  Q4
Digit 1  Digit 2  Digit 3  Digit 4

Congratulations!
Enter the completion code to make your escape!
Key: Mitosis and Meiosis

Level 1

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<th>Answers</th>
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<td>A</td>
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<td>Q2</td>
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Level 2

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<td>Q2</td>
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Level 3

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Level 4

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Level 5

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<td>Q2</td>
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Congratulations!
Enter the completion code to make your escape!

2 7 5 1
Large Cards
Mitosis and Meiosis

Digital Link: http://bit.ly/2m8PRTt
Mission Objective

Using a special laser beam, your class has been shrunken down to enter and explore a dividing cell. However, in order to grow back to normal size, everyone must be located outside of the cell. You must use your knowledge of mitosis and meiosis to escape the cell. Answer the questions at each level and be sure to record each answer. Once all four questions have been answered, use the decoder to progress to the next level. You must hurry to escape the cell before your entire class stays small forever!
Level 1

Identify this stage of mitosis:

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B. Metaphase
C. Anaphase
D. Telophase
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B. Metaphase  
C. Anaphase  
D. Telophase
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B. Metaphase
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D. Telophase
Level 1
Which is correct about the difference between mitosis and meiosis?

A. Mitosis results in 2 cells, meiosis in 4
B. Mitosis only occurs in sex cells
C. Meiosis produces identical cells
D. Meiosis cells divide once
What are the set of microtubules which move to opposite ends of the cell to aid in cell division called?

A. Centrosomes  
B. Chromosomes  
C. Centromeres  
D. Centrioles
Which of the following does not occur during Prophase in mitosis?

A. Chromosomes coil up  
B. Centromeres divide  
C. Nuclear envelope dissolves  
D. Spindle fibers form
What are the two resulting cells formed from a single cell called?

A. Brother cells  
B. Sister cells  
C. Daughter cells  
D. Parent cells
Level 2

A B C D

1 2 3 4
Level 3

Q1

What types of genetic information must be copied for the next generation of cells?

A. Deoxyribonucleic acid
B. Ribonucleic acid
C. Enzymes
D. Proteins
During which stage of mitosis do chromosomes separate?

A. Prophase  
B. Metaphase  
C. Anaphase  
D. Telophase
Which of the following does not occur during Telophase?

A. Nuclear envelope forms
B. Chromosomes uncoil
C. Spindle fibers dissolve
D. Chromosomes begin to move toward opposite poles
The protein fibers that extend from centrioles and attach to chromosomes to pull them apart are called

A. Cilia
B. Spindle fibers
C. Kinetochore
D. Flagella
Level 3

A = 6

B = 1

C = 6

D = 3
Which is true regarding both mitosis and meiosis?

A. Both occur in only animal cells  
B. All organisms go through both mitosis and meiosis  
C. They are both involved in cell division  
D. None of the above
Which of the following undergo meiosis?

A. Liver cells
B. Sperm cells
C. Unicellular organisms
D. All of the above
Which correctly pairs this structure with what its made from?

A. Chromosome: DNA & Protein
B. Centriole: DNA & Protein
C. Centromere: Protein & Fat
D. Centriole: DNA & Sugar
Which of the following does not occur during Anaphase?

A. Centromeres divide
B. Chromosomes move towards opposite poles
C. Spindle fibers pull on the chromosomes
D. Nuclear envelope dissolves
<table>
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<th>B</th>
<th>C</th>
<th>D</th>
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<td>♦️</td>
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<tr>
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<td>♥️</td>
<td>♦️</td>
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<tr>
<td>Q4</td>
<td>♠️</td>
<td>♦️</td>
<td>♥️</td>
<td>♣️</td>
</tr>
</tbody>
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Which of the following is not true about meiosis?

A. Final cells have half of the DNA
B. More complex than mitosis
C. Muscle cells reproduce in this way
D. Requires a male and a female to reproduce
Level 5

What is the exchange of genes between homologous chromosomes called?

A. Crossing over
B. Independent assortment
C. Criss-Crossing
D. Meiosis
What is the random distribution of chromosomes during meiosis called?

A. Genetic variation
B. Recombination
C. Crossing over
D. Independent Assortment
Which is correctly matched with the appropriate number of chromosomes in each daughter cell?

A. Meiosis: 2 sets of 23 chromosomes
B. Meiosis: 1 set of 23 chromosomes
C. Mitosis: 1 set of 23 chromosomes
D. Mitosis: 2 sets of 46 chromosomes
Level 5

\[
\begin{array}{ccc}
3 & + & 2 \\
+ & + & + \\
1 & + & C \\
= & = & = \\
D & + & 5 \\
\end{array}
\]

A = 7
C = 4
B = 9
D = 2

Level 5: Hard

\[
\begin{align*}
\text{😊} + \text{😊} &= 8 \\
\text{😊} + \text{☀} &= 9 \\
\text{☀} + \text{☽} &= 8 \\
\text{☽} + \text{🔺} &= 12
\end{align*}
\]

A = ☀
B =🔺
C =☽
D =😊