Angela Hines Science 8 DRIVING QUESTION? "What teenage problem would you want your superhero to tackle and solve?"  Bailly STEM Academy Monday 3-28-22 STEM "Comic Book Science/Cells" {REVISED}				
Standards:	Enduring Understandings:	Learning Objectives: (I can statements)		
8.LS.9 Examine traits of individuals within a species that may give them an advantage or disadvantage to survive and reproduce in stable or changing environment.  6-8.LST.7.1: Conduct short research assignments and tasks to answer a question (including a self- generated question), or test a hypothesis, drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.  6-8.E.4 Develop a prototype to generate data for repeated investigations and modify a proposed object, tool, or process such that an optimal design can be achieved.	Individual traits and characteristics play a major role for survival.  Acquired traits are those characteristics that are developed during the life of an organism; they do not involve DNA.  Acquired traits involve body cells called somatic cells.  Inherited traits are encoded from the DNA of the biological parents.  Inherited traits involve sex cells; egg/sperm called germ cells.  Specific traits can give an advantage or a disadvantage to a species/population.	-I can evaluate necessary individual traits and characteristics necessary for survivalI can conduct short research tasks to allow multiple avenues of exploration for questionsI can create a superhero based on the necessary personal traits and physical attributes needed for superpowers.		
	Essential Questions:			
	Differentiate personal/character traits and physical traits. Discuss acquired traits and inherited			

traits.

Evaluate the role of traits for the survival of a superhero.

Describe the qualities of a great

superhero. Evaluate the most essential

Evaluate the most essential personal/character traits for creating your superhero.

Discuss how to create a superhero based on the best physical attributes for super powers.

#### **Procedures: Vocabulary:** Assessment: NOW/STEM Bell Virtual Science Periods 1, 2, 4, 5, 7 **Traits** Personal/Character DO NOW/STEM Bell Ringer (5min) 30 pts Monday 3-28-22 Ringer (5min) 30 **Traits** Differentiate personal/character and physical traits. Restate the pts Monday **Physical Traits** question in your answer. 3-28-22 **Inherited Traits** \*\*\*Differentiate student groups (drawing artists/online artists); Differentiate **Acquired Traits** personal/characte assign roles for each group member-facilitator, note taker, reporter, Genes and timekeeper. (Must allow for students absent to join a group.) r and physical Superpowers traits. Restate the Natural Selection question in your Environment **DAY 1** Inherited vs Acquired Traits answer. Competition https://www.clarenceschools.org/cms/lib/NY01913587/Centricity/Domai Survival of the Fittest n/350/Inherited\_vs\_aquired\_traits\_PPT%20edited.pdf Genes DNA- double helix

#### **SLIDE SHOW 1-13**

Teacher/Students discuss read together; students take notes on Inherited vs Acquired Traits

Students/Teacher will watch/discuss a short video The 5 Coolest Superpowers in Pop Culture (1:54 min)

https://powerlisting.fandom.com/wiki/List\_of\_Supernatural\_Powers\_and\_Abilities

Students will then research and differentiate personal/character traits and physical traits necessary for a superhero breed.

Students will collaborate in groups of 4 to brainstorm traits for their superhero. All groups will collaborate to come up with a common list of personal/character traits and physical traits via student facilitator.

Student facilitator.

Each different class as a whole will then determine/vote on which characteristics to give their superhero via student facilitator. Due Wednesday 3-30-22

Each group in each class will create a name/sex for the superhero. Each group in each class will brainstorm for one problem for the superhero to solve.

Student facilitator

Lastly, all students in each class will vote on one name/sex of superhero

Trait List Due Wednesday 3-30-22

Groups create a GO of choice based on Natural Selection for Superhero pgs.248-256 Elevate *Pearson Realize* Due Thursday 3-31-22

STEM Exit Ticket (50 pts) Monday 3-28-22 Explore a problem that is important to your age

Deoxyribonucleic Acid Base pairs-adenine, thymine, guanine, cytosine Pyrimidine Purine Nucleotide Complementary strand Hydrogen bonds Phosphate, deoxyribose Proteins-amino acids Cells Somatic Cells Germ Cells **Natural Selection** Environment Competition Survival of the Fittest Blood Types-A, B, AB, O

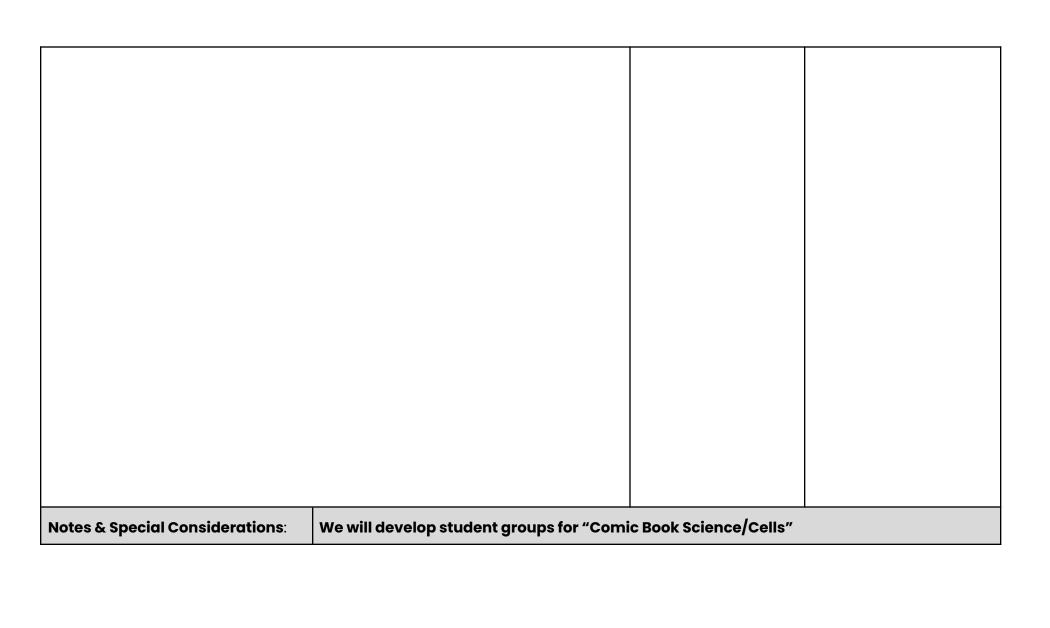
Antigen
Antibody

Muscle Types

Replicate Mutation Species

Breed

and one problem for the superhero to solve. Due Thursday 3-31-22	group that you would like your superhero to tackle.	
Student groups read/answer all questions <b>Natural Selection pgs.248-256</b> , <i>elevate science</i> , <i>Pearson Realize</i> . Begin in class; finish for homework. Discuss/go over answers of student choice.  Groups create a graphic organizer of choice to display important concepts relating to		
their superhero's background/origination. Due Thursday 3-31-22		
<b>STEM Exit Ticket (50 pts) Monday 3-28-22</b> Explore a problem that is important to your age group that you would like your superhero to tackle. <i>Restate the question in your answer.</i>		



Standards:	Enduring Understandings:	Learning Objectives: (I can statements)
8.LS.9 Examine traits of individuals within a species that may give them an advantage or disadvantage to survive and reproduce in stable or changing environment.  6-8.LST.7.1: Conduct short research assignments and tasks to answer a question (including a self- generated question), or test a hypothesis, drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.  6-8.E.4 Develop a prototype to generate data for repeated investigations and modify a proposed object, tool, or process such that an optimal design can be achieved.	Individual traits and characteristics play a major role for survival.  Acquired traits are those characteristics that are developed during the life of an organism; they do not involve DNA.  Acquired traits involve body cells called somatic cells.  Inherited traits are encoded from the DNA of the biological parents.  Inherited traits involve sex cells; egg/sperm called germ cells.  Specific traits can give an advantage or a disadvantage to a species/population.	-I can evaluate necessary individual traits and characteristics necessary for survivalI can conduct short research tasks to allow multiple avenues of exploration for questionsI can create a superhero based on the necessary personal traits and physical attributes needed for super powers.
	Essential Questions:	
	Differentiate personal/character traits and physical traits. Discuss acquired traits and inherited traits. Evaluate the role of traits for the survival of a superhero.	

Describe the qualities of a great superhero.

Evaluate the most essential personal/character traits for creating your superhero.

Discuss how to create a superhero based on the best physical attributes for super powers.

#### **Procedures: Vocabulary:** Assessment: DO NOW/STEM Bell Virtual Science Periods 1, 2, 4, 5, 7 **Traits** Personal/Character DO NOW/STEM Bell Ringer (5min) 30 pts Tuesday 3-29-22 Ringer (5min) 30 **Traits** Express your opinion. Do you feel personal/character traits are more or pts Tuesday **Physical Traits** less important as physical traits for a superhero? Explain your answer. 3-29-22 **Inherited Traits** Restate the question in your answer. **Express your Acquired Traits** opinion. Do you feel Genes \*\*\*Differentiate student groups (drawing artists/online artists); personal/characte Superpowers assign roles for each group member-facilitator, note taker, reporter, r traits are more or Natural Selection and timekeeper. (Must allow for students absent to join a group.) less important as Environment physical traits for a Competition DAY 2/3 Inherited vs Acquired Traits superhero? Explain Survival of the Fittest https://www.clarenceschools.org/cms/lib/NY01913587/Centricity/Domai your answer. Genes DNA- double helix n/350/Inherited\_vs\_aquired\_traits\_PPT%20edited.pdf Restate the Deoxyribonucleic Acid question in your Base pairs-adenine, **SLIDE SHOW 15-25** answer. thymine, guanine, **PRACTICE** cytosine Teacher/Students discuss read together; students take notes, Pyrimidine

differentiate acquired vs inherited traits. **Purine** Nucleotide Complementary strand QUIZ Hydrogen bonds **SLIDES 26-36** Phosphate, deoxyribose QUIZ Proteins-amino acids Students will research and differentiate personal/character traits and **SLIDES 26-36** Cells physical traits necessary for a superhero breed. Students will Somatic Cells collaborate in groups of 4 to brainstorm traits for their superhero. All Germ Cells groups will collaborate to come up with a common list of traits via Natural Selection Trait List Due student facilitator. Each different class as a whole will then determine Environment Wednesday 3-30-22 which characteristics to give their superhero. Due Wednesday 3-30-22 Competition Survival of the Fittest Blood Types-A, B, AB, O Student facilitator. Antigen Each different class as a whole will then determine/vote on which Antibody characteristics to give their superhero via student facilitator. Due **Muscle Types** Wednesday 3-30-22 Replicate Mutation Each group in each class will create a name/sex for the superhero. Each Species group in each class will brainstorm for one problem for the superhero to Breed solve. Groups create a GO of Student facilitator choice based on **Natural Selection for** Lastly, all students in each class will vote on one name/sex of superhero Superhero pgs.248-256 and one problem for the superhero to solve. Due Thursday 3-31-22 Elevate Pearson Realize Due Thursday 3-31-22

Students read/answer all questions **Natural Selection pgs.248-256**, *elevate science*, **Pearson Realize.** Begin in class; finish for homework. Discuss/go over answers of student

their superhero's background/origination	2 Discuss how you would envision drawing your	STEM Exit Ticket (50 pts) Tuesday 3-29-22 Discuss how you would envision drawing your superhero. Restate the question in your answer.	
Notes & Special Considerations:	We will develop student groups for "Comi	ic Book Science/Cells"	

Wednesday 3-30-22 STEM "Comic Book Science/ Cells"			
Standards:	Enduring Understandings:	Learning Objectives: (I can statements)	
<ul> <li>8.LS.9 Examine traits of individuals within a species that may give them an advantage or disadvantage to survive and reproduce in stable or changing environment.</li> <li>6-8.LST.7.1: Conduct short research assignments and tasks to answer a question (including a self- generated question), or test a hypothesis, drawing on several sources and generating</li> </ul>	Individual traits and characteristics play a major role for survival.  Acquired traits are those characteristics that are developed during the life of an organism; they do not involve DNA.  Acquired traits involve body cells called somatic cells.  Inherited traits are encoded from the	-I can evaluate necessary individual traits and characteristics necessary for survivalI can conduct short research tasks to allow multiple avenues of exploration for questionsI can create a superhero based on the necessary personal traits and physical attributes needed for super powers.	

additional related, focused questions that allow for multiple avenues of exploration.

**6-8.E.4** Develop a prototype to generate data for repeated investigations and modify a proposed object, tool, or process such that an optimal design can be achieved.

DNA of the biological parents.
Inherited traits involve sex cells;
egg/sperm called germ cells.
Specific traits can give an advantage or
a disadvantage to a species/population.

## **Essential Questions:**

Differentiate personal/character traits and physical traits.

Discuss acquired traits and inherited traits.

Evaluate the role of traits for the survival of a superhero.

Describe the qualities of a great superhero.

Evaluate the most essential personal/character traits for creating your superhero.

Discuss how to create a superhero based on the best physical attributes for super powers.

Procedures:	Assessment:	Vocabulary:
Virtual Science Periods 1, 2,4,5,7	DO NOW/STEM Bell	Traits
DO NOW/STEM Bell Ringer (5min) 30 pts Wednesday 3-31-22	Ringer (5min) 30	Personal/Character
Explore the similarities and differences between germ cells and somatic	pts Wednesday	Traits
cells.	3-31-22	Physical Traits
	Explore the	Inherited Traits
***Differentiate student groups (drawing artists/ online artists);	similarities and	Acquired Traits
assign roles for each group member-facilitator, note taker, reporter,	differences of germ	Genes
and timekeeper. (Must allow for students absent to join a group.)	cells and somatic	Superpowers
und timekeepen. (Must allow for students absent to join a group.)		Natural Selection
	cells.	Environment
DAY 2/3 Inherited vs Acquired Traits		Competition
https://www.clarenceschools.org/cms/lib/NY01913587/Centricity/Domai		Survival of the Fittest
n/350/Inherited_vs_aquired_traits_PPT%20edited.pdf		Genes
		DNA- double helix
SLIDE SHOW 15-25		Deoxyribonucleic Acid
PRACTICE		Base pairs-adenine,
Teacher/Students discuss read together; students take notes,		thymine, guanine,
differentiate acquired vs inherited traits.		cytosine
		Pyrimidine
QUIZ		Purine
SLIDES 26-36		Nucleotide
SLIDES 20-30	01117	Complementary strand
	QUIZ	Hydrogen bonds
Students will research and differentiate personal/character traits and	SLIDES 26-36	Phosphate, deoxyribose
physical traits necessary for a superhero breed. Students will		Proteins-amino acids
collaborate in groups of 4 to brainstorm traits for their superhero. All		Cells
groups will collaborate to come up with a common list of traits via		Somatic Cells
student facilitator. Each different class as a whole will then determine	Trait List Due	Germ Cells

Wednesday 3-30-22 which characteristics to give their superhero. Due Wednesday 3-30-22 Natural Selection Environment Competition Student facilitator. Survival of the Fittest Each different class as a whole will then determine/vote on which Blood Types-A, B, AB, O characteristics to give their superhero via student facilitator. Due Antigen Wednesday 3-30-22 **Antibody Muscle Types** Each group in each class will create a name/sex for the superhero. Each Replicate group in each class will brainstorm for one problem for the superhero to Mutation solve. Species Groups create a GO of Breed choice based on Student facilitator Natural Selection for Superhero pgs.248-256 Lastly, all students in each class will vote on one name/sex of superhero Elevate Pearson Realize and one problem for the superhero to solve. Due Thursday 3-31-22 Due Thursday 3-31-22 Students read/answer all questions Natural Selection pgs.248-256, elevate science, Pearson Realize. Begin in class; finish for homework. Discuss/go over answers of student choice. STEM Exit Ticket (50 Groups create a graphic organizer of choice to display important concepts relating to pts) Wednesday their superhero's background/origination. Due Thursday 3-31-22 3-30-22 Explain how natural STEM Exit Ticket (50 pts) Wednesday 3-30-22 Explain how natural selection could selection could hypothetically affect your superhero. Restate the hypothetically question in your answer. affect your superhero. Restate the question in

		your answer.	
Notes & Special Considerations:	We will develop student groups for "Comic Book Science/Cells"		

Thursday 3-31-22 STEM "Comic Book Science/Cells"			
Standards:	Enduring Understandings:	Learning Objectives: (I can statements)	
8.LS.9 Examine traits of individuals within a species that may give them an advantage or disadvantage to survive and reproduce in stable or changing environment. 6-8.LST.7.1: Conduct short research assignments and tasks to answer a question (including a self- generated question), or test a hypothesis, drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration. 6-8.E.4 Develop a prototype to generate data for repeated investigations and modify a proposed object, tool, or process such that an optimal design can be achieved.	Individual traits and characteristics play a major role for survival.  Acquired traits are those characteristics that are developed during the life of an organism; they do not involve DNA.  Acquired traits involve body cells called somatic cells.  Inherited traits are encoded from the DNA of the biological parents.  Inherited traits involve sex cells; egg/sperm called germ cells.  Specific traits can give an advantage or a disadvantage to a species/population.	-I can evaluate necessary individual traits and characteristics necessary for survivalI can conduct short research tasks to allow multiple avenues of exploration for questionsI can create a superhero based on the necessary personal traits and physical attributes needed for super powers.	

	Essential Questions:  Differentiate personal/character traits and physical traits. Discuss acquired traits and inherited traits. Evaluate the role of traits for the survivo of a superhero. Describe the qualities of a great superhero. Evaluate the most essential	al	
	personal/character traits for creating your superhero.  Discuss how to create a superhero bas on the best physical attributes for superpowers.	l l	
ocedures:	powers.	Assessment:	Vocabulary:

# Virtual Science Periods 1, 2,4,5,7 DO NOW/ STEM Bell Ringer (5min) 30 pts Thursday 3-31-22

Discuss Prokaryotic and Eukaryotic cells. Give an example of each. Restate the question in your answer.

\*\*\*Differentiate student groups (drawing artists/ online artists); assign roles for each group member-facilitator, note taker, reporter, and timekeeper. (Must allow for students absent to join a group.)

Student facilitator

All students in each class will vote on one name/sex of superhero and one problem for the superhero to solve. Due Thursday 3-31-22

Student groups research cells/organelles to justify which organelles could be mutated/replicated/or changed in some way to enhance the superpowers of our superhero.

Students can watch/take notes (9:37 min) Introduction to Cells: The Grand Cell Tour

https://www.youtube.com/watch?v=8IlzKri08kk

Students will decide which organelles will be mutated/replicated/or changed in some way to enhance the superpowers of our superhero.

Students read/answer all questions **Natural Selection pgs.248-256**, *elevate science*, *Pearson Realize*. Discuss/go over answers of student choice. Begin in class; finish for homework.

Groups create a graphic organizer of choice to display important concepts relating to their superhero's background/origination. Due Thursday 3-31-22

Teacher/Students discuss origination/ per group of the superhero to write in the comic

DO NOW/STEM Bell
Ringer (5min) 30
pts Thursday
3-31-22
Discuss
Prokaryotic and
Eukaryotic cells.
Give an example of each.

**Traits** 

Personal/Character

**Traits** 

**Physical Traits** 

**Inherited Traits** 

Acquired Traits

Genes

Superpowers

Natural Selection

Environment

Competition

Survival of the Fittest

Genes

DNA- double helix

Deoxyribonucleic Acid

Base pairs-adenine,

thymine, guanine,

cytosine

Pyrimidine

**Purine** 

Nucleotide

Complementary strand

Hydrogen bonds

Phosphate, deoxyribose

Proteins-amino acids

Cells

Somatic Cells

Germ Cells

Natural Selection

Environment

Groups create a GO of choice based on Natural Selection for Superhero pgs.248-256 Elevate *Pearson Realize* Due Thursday 3-31-22

intro.

Students will be grouped for those who can and want to draw: brainstorm how to create your superhero through artwork/drawing; must include some ideas for incorporating cells. Must figure out how to illustrate the superhero in comic book style solving the problem chosen by the class.

Students who like online comic constructions, possible suggestions of websites to use: makebeliefscomix.com

storyboardsthat

Pixton

Must include some ideas for incorporating cells. Must figure out how to illustrate the superhero in comic book style solving the problem chosen by the class.

Students will research the importance/structure of DNA using pgs. 194-197 *elevate science, Pearson Realize.* Begin in class; finish for homework. Discuss/go over answers of student choice. Each student group will design/create a given DNA sequence model for Superhero. Each group will be given a single DNA strand and must complete the sequence for the second complementary strand to form their DNA model. Due Tuesday 3-5-22.

Students/teacher will watch YouTube video (8:54min). Students take notes.

**DNA Structure and Function** 

https://www.youtube.com/watch?v= POdWsii7AI

Students will research the 4 different blood types in an effort to find out which blood type would be most advantageous for survival of the superhero. Students will decide on best choice or some type of alternative. Students/teacher will watch YouTube video

(11:34 min). Students take notes. Blood Types Explained: Easy and Simple

https://www.youtube.com/watch?v=wckwUSuz8uk

**Adult Connections**\*\*\*\*Student will brainstorm: Are there any members of your community who regularly draw comic-style artwork and would be willing to speak with

Competition
Survival of the Fittest
Blood Types-A, B, AB, O
Antigen
Antibody
Muscle Types
Replicate
Mutation
Species
Breed

DNA sequence model for Superhero. Due Tuesday 3-5-22.

in the medical field, a professor at a nearb to cells? Students will write letters/phone STEM Exit Ticket (50 pts) Thursday 3-31-2	calls/emails, etc. for this purpose.  instorm: Are there any members of your k with your class, for example, a doctor, person y college/university to discuss topics related	STEM Exit Ticket (50 pts) Thursday 3-31-22 Examine how we could incorporate the concept of "cells" in our superhero comics.  Restate the question in your answer.	
Notes & Special Considerations: We will develop student groups for "Comic Book Science".			

Friday 4-1-22	STEM "Comic Book Science/Cells"		
Standards:	Enduring Understandings: Learning Objectives: (I can statements)		
<b>8.LS.9</b> Examine traits of individuals within a species that may give them an advantage or disadvantage to survive and	Individual traits and characteristics play a major role for survival. Acquired traits are those characteristics	-I can evaluate necessary individual traits and characteristics necessary for survivalI can conduct short research tasks to allow	

reproduce in stable or changing environment.

**6-8.LST.7.1:** Conduct short research assignments and tasks to answer a question (including a self- generated question), or test a hypothesis, drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.

**6-8.E.4** Develop a prototype to generate data for repeated investigations and modify a proposed object, tool, or process such that an optimal design can be achieved.

that are developed during the life of an organism; they do not involve DNA.

Acquired traits involve body cells called somatic cells.

Inherited traits are encoded from the DNA of the biological parents.
Inherited traits involve sex cells; egg/sperm called germ cells.
Specific traits can give an advantage or a disadvantage to a species/population.

multiple avenues of exploration for questions.

-I can create a superhero based on the necessary personal traits and physical attributes needed for super powers.

## **Essential Questions:**

Differentiate personal/character traits and physical traits.

Discuss acquired traits and inherited traits.

Evaluate the role of traits for the survival of a superhero.

Describe the qualities of a great superhero.

Evaluate the most essential personal/character traits for creating your superhero.

ment: Voc	cabulary:
opts Friday  Trai  Physical  Inher  I	Traits Personal/Character Traits Physical Traits Inherited Traits Acquired Traits Genes Superpowers Natural Selection Environment
Surv	npetition vival of the Fittest
Deo Bas thyr cyto Pyrii Puri	A- double helix exyribonucleic Acid e pairs-adenine, mine, guanine, esine midine
	Puri

Students who like online comic constructions, possible suggestions of websites to use: makebeliefscomix.com

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Must include some ideas for incorporating cells. Must figure out how to illustrate the superhero in comic book style solving the problem chosen by the class.

Students will research the importance/structure of DNA using pgs. 194-197 *elevate science, Pearson Realize*. Begin in class; finish for homework. Discuss/go over answers of student choice. Each student group will design/create a DNA model for Superhero. Each group will be given a single DNA strand and must complete the sequence for the second complementary strand to form their DNA model. Due Tuesday 3-5-22.

Students/teacher will watch YouTube video (8:54min). Students take notes.

**DNA Structure and Function** 

https://www.youtube.com/watch?v= POdWsii7AI

Students will research the 4 different blood types in an effort to find out which blood type would be most advantageous for survival of the superhero. Students will decide on best choice or some type of alternative. Students/teacher will watch YouTube video

(11:34 min). Students take notes. Blood Types Explained: Easy and Simple

https://www.youtube.com/watch?v=wckwUSuz8uk

**Adult Connections**\*\*\*\*Student will brainstorm: Are there any members of your community who regularly draw comic-style artwork and would be willing to speak with your class, for example, a parent, a group of high school students, or an art teacher? Students will write letters/phone calls/emails, etc. for this purpose.

**Adult Connections:**\*\*\*\* Student will brainstorm: Are there any members of your community who would be willing to speak with your class, for example, a doctor, person in the medical field, a professor at a nearby college/university.... to discuss topics related to cells? Students will write letters/phone calls/emails, etc. for this purpose.

DNA sequence model for Superhero. Due Tuesday 3-5-22. Proteins-amino acids Cells Somatic Cells Germ Cells Natural Selection Environment Competition Survival of the Fittest Blood Types-A, B, AB, O Antigen Antibody **Muscle Types** Replicate Mutation **Species** Breed

STEM Quick Write (50 pts) Friday 4-1-22 Describe where we would

STEM Quick Write (50 pts) Friday DNA in our superhero. Restate the	<b>4-1-22</b> Describe where we would find question in your answer.	find DNA in our superhero. Restate the question in your answer.	
Notes & Special Considerations:	We will develop student groups for "Comic Book Science".		

Cont'd from Friday 4	STEM "Comic Book Science/Cells"	
Standards:	Enduring Understandings:	Learning Objectives: (I can statements)
<ul> <li>8.LS.9 Examine traits of individuals within a species that may give them an advantage or disadvantage to survive and reproduce in stable or changing environment.</li> <li>6-8.LST.7.1: Conduct short research assignments and tasks to answer a question (including a self- generated question), or test a hypothesis, drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.</li> <li>6-8.E.4 Develop a prototype to generate data for repeated investigations and modify a proposed object, tool, or process such that an optimal design can</li> </ul>	Individual traits and characteristics play a major role for survival.  Acquired traits are those characteristics that are developed during the life of an organism; they do not involve DNA.  Acquired traits involve body cells called somatic cells.  Inherited traits are encoded from the DNA of the biological parents.  Inherited traits involve sex cells; egg/sperm called germ cells.  Specific traits can give an advantage or a disadvantage to a species/population.	-I can evaluate necessary individual traits and characteristics necessary for survivalI can conduct short research tasks to allow multiple avenues of exploration for questionsI can create a superhero based on the necessary personal traits and physical attributes needed for super powers.

be achieved.			
	Essential Questions:		
	Differentiate personal/character traits and physical traits. Discuss acquired traits and inherited traits.		
	Evaluate the role of traits for the survival of a superhero.  Describe the qualities of a great		
	superhero.  Evaluate the most essential personal/character traits for creating your superhero.		
	Discuss how to create a superhero based on the best physical attributes for super powers.		
Procedures:		Assessment:	Vocabulary:

## Virtual Science Periods 1, 2,4,5,7

Student groups research cells/organelles to justify which organelles could be mutated/replicated/or changed in some way to enhance the superpowers of our superhero.

Students can watch/take notes (9:37 min) Introduction to Cells: The Grand Cell Tour

https://www.youtube.com/watch?v=8IlzKri08kk

Students will decide which organelles will be mutated/replicated/or changed in some way to enhance the superpowers of our superhero.

Teacher/Students discuss origination/ per group of the superhero to write in the comic intro.

Students will be grouped for those who can and want to draw: brainstorm how to create your superhero through artwork/drawing; must include some ideas for incorporating cells. Must figure out how to illustrate the superhero in comic book style solving the problem chosen by the class.

Students who like online comic constructions, possible suggestions of websites to use: makebeliefscomix.com

story boards that

Pixton

Must include some ideas for incorporating cells. Must figure out how to illustrate the superhero in comic book style solving the problem chosen by the class.

Students will research the importance/structure of DNA using pgs. 194-197 *elevate science, Pearson Realize.* Begin in class; finish for homework. Discuss/go over answers of student choice. Each student group will design/create a given DNA sequence model for Superhero. Due Tuesday 3-5-22.

DNA sequence model for Superhero. Due Tuesday 3-5-22.

**Traits** Personal/Character **Traits Physical Traits Inherited Traits Acquired Traits** Genes Superpowers Natural Selection Environment Competition Survival of the Fittest Genes DNA- double helix Deoxyribonucleic Acid Base pairs-adenine, thymine, guanine, cytosine Pyrimidine **Purine** Nucleotide Complementary strand Hydrogen bonds Phosphate, deoxyribose Proteins-amino acids Cells Somatic Cells Germ Cells Natural Selection

Environment

Students/teacher will watch YouTube video (8:54min). Students take notes.

**DNA Structure and Function** 

https://www.youtube.com/watch?v=\_POdWsii7AI

Students will research the 4 different blood types in an effort to find out which blood type would be most advantageous for survival of the superhero. Students will decide on best choice or some type of alternative. Students/teacher will watch YouTube video

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**Adult Connections:**\*\*\*\* Student will brainstorm: Are there any members of your community who would be willing to speak with your class, for example, a doctor, person in the medical field, a professor at a nearby college/university.... to discuss topics related to cells? Students will write letters/phone calls/emails, etc. for this purpose.

Competition Survival of the Fittest Blood Types-A, B, AB, O Antigen Antibody

Muscle Types

Replicate

Mutation

**Species** 

Breed

**Notes & Special Considerations:** 

We will develop student groups for "Comic Book Science".