

THE HELIXED GENOME

(Opportunity for Excellence)

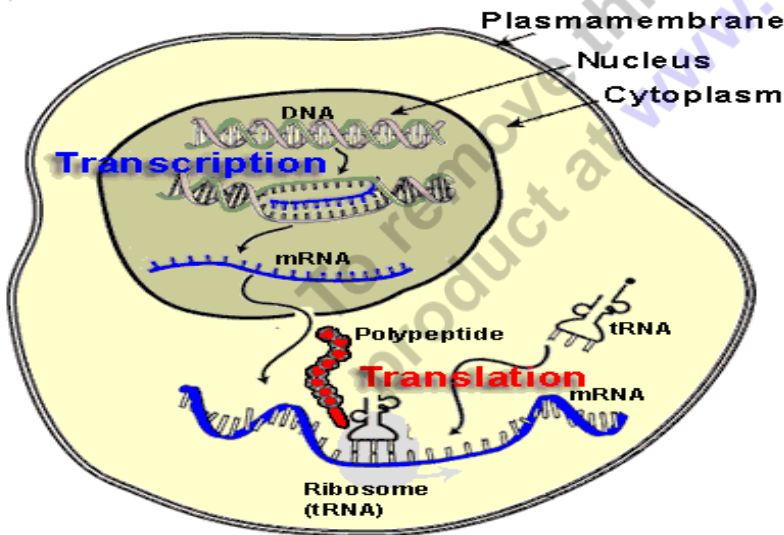
Name:

Due:

Please draw, name, and correctly label a DNA molecule. Do the same for RNA in the box next door.

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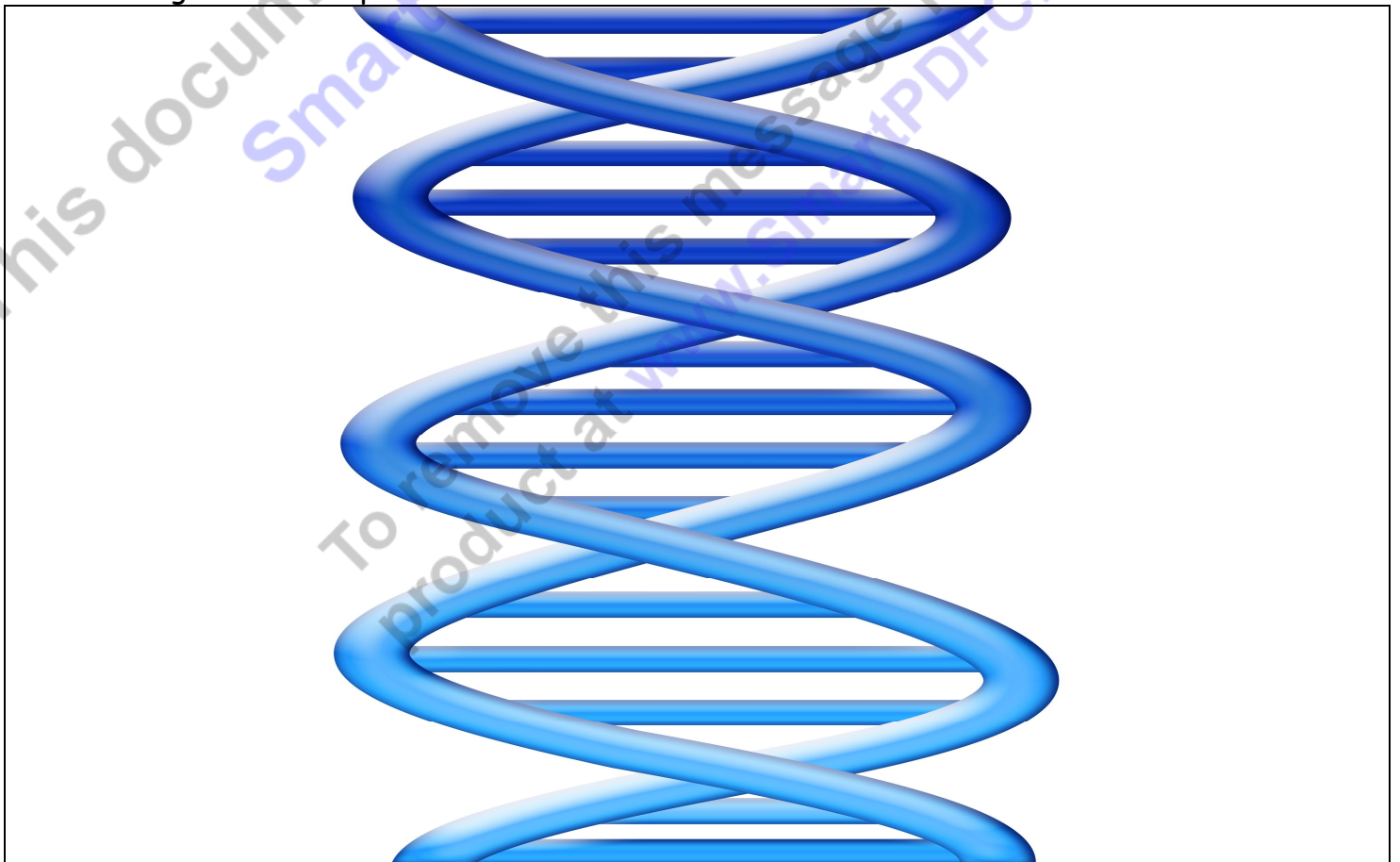
Please describe the role of DNA in determining a cells make up. Use the picture below to help you.



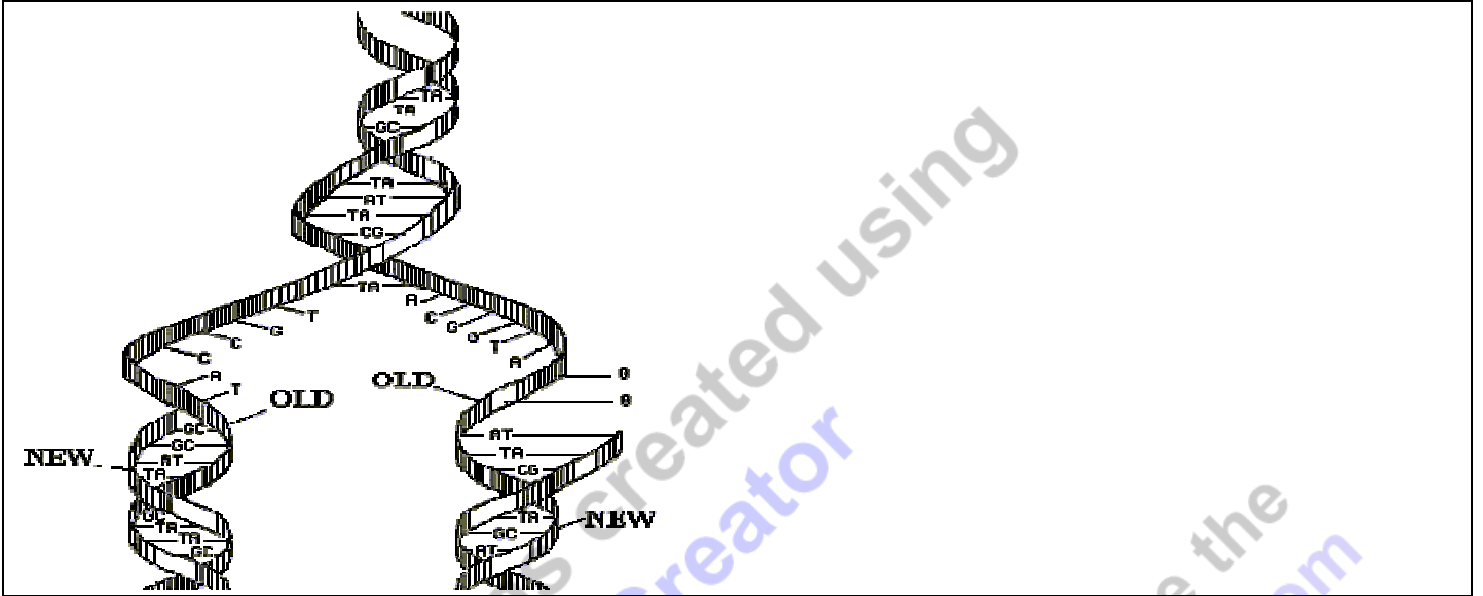
Please provide some insight to the photos below. Who or what are they? How are they connected?



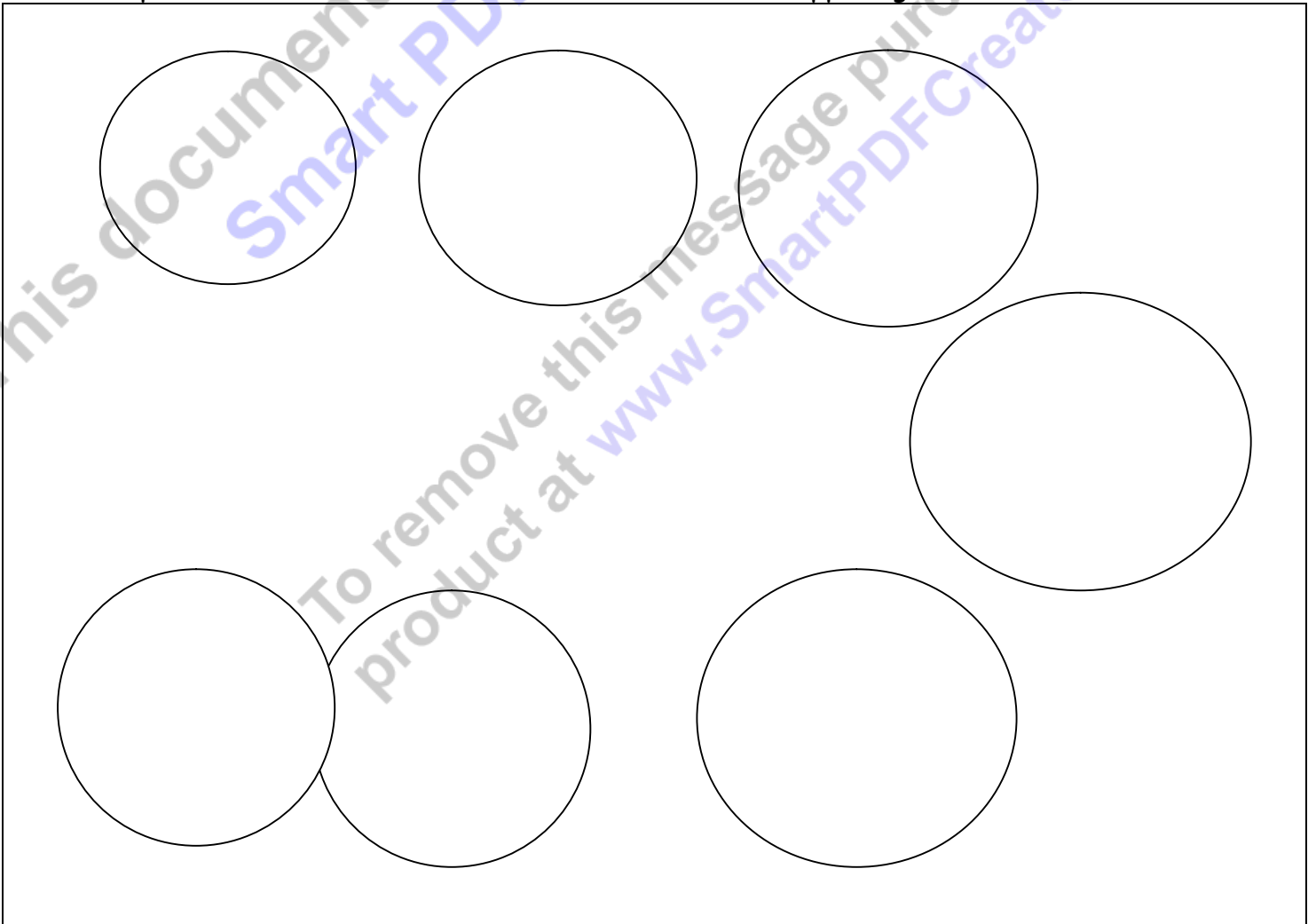
Please complete the double helix below by drawing in some nucleotides. Make sure the right nucleotide goes with its partner. What are their names?



Please describe the picture below. What do you know about it?



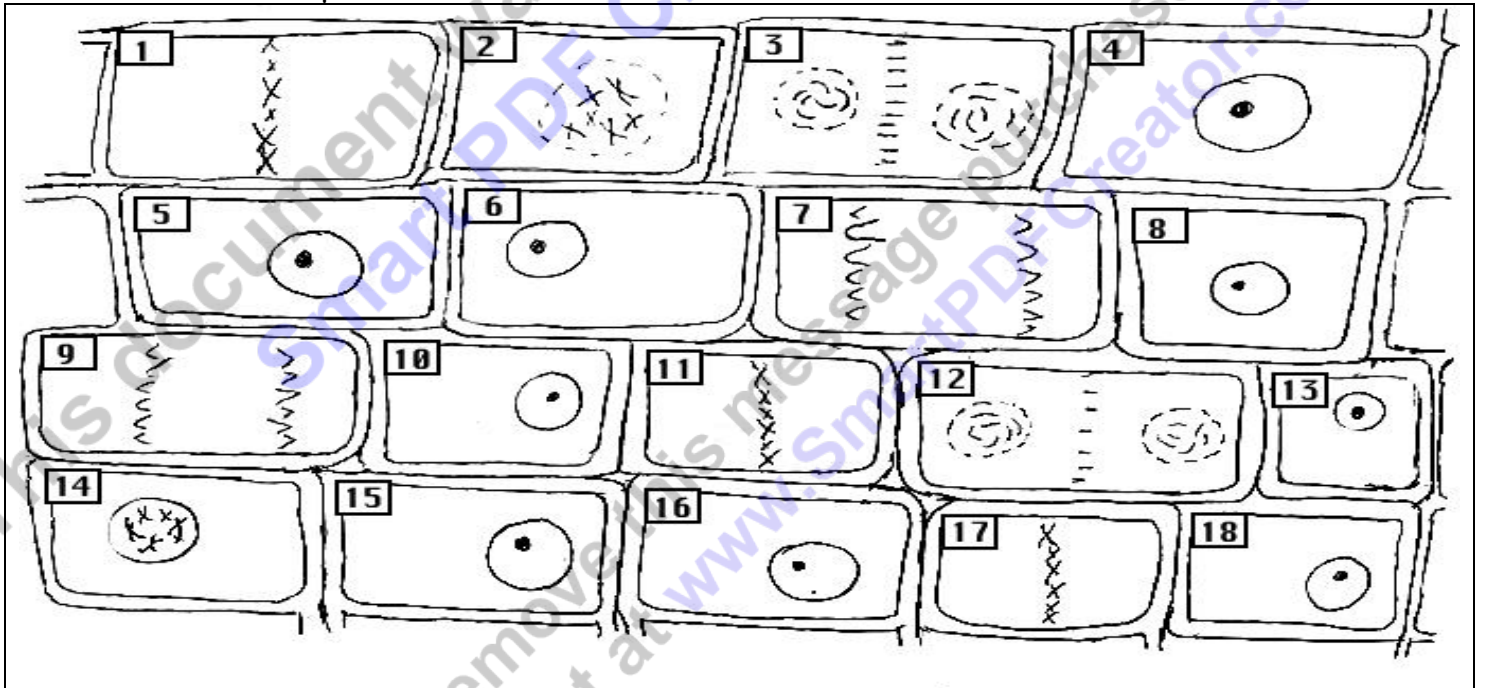
Please use the blank template below to show a cell go through all the phases of mitosis. Please label the phases as well as show with illustrations what is happening.



What is this a cartoon of? Please label its parts. How many do humans usually have in their cells? What about their sex cells?

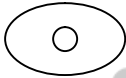


Please describe the phase of mitosis for 1-18 in boxes below.

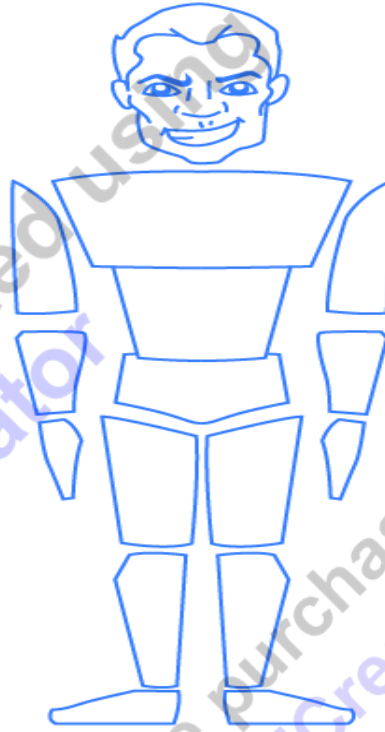


1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18

What is cancer? Please demonstrate with the cell below.



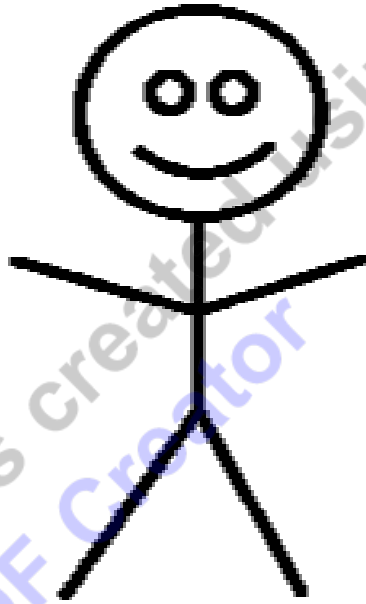
Please decorate the person below with accessories and poor habits that may increase his chances of getting cancer.



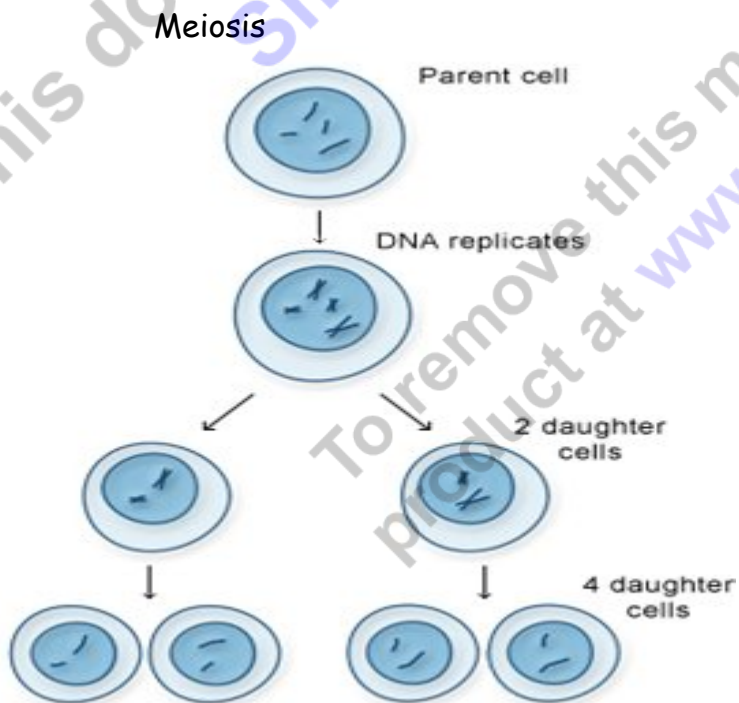
What are some of the chemicals in these? Do most people know this? If so, than why do they smoke?

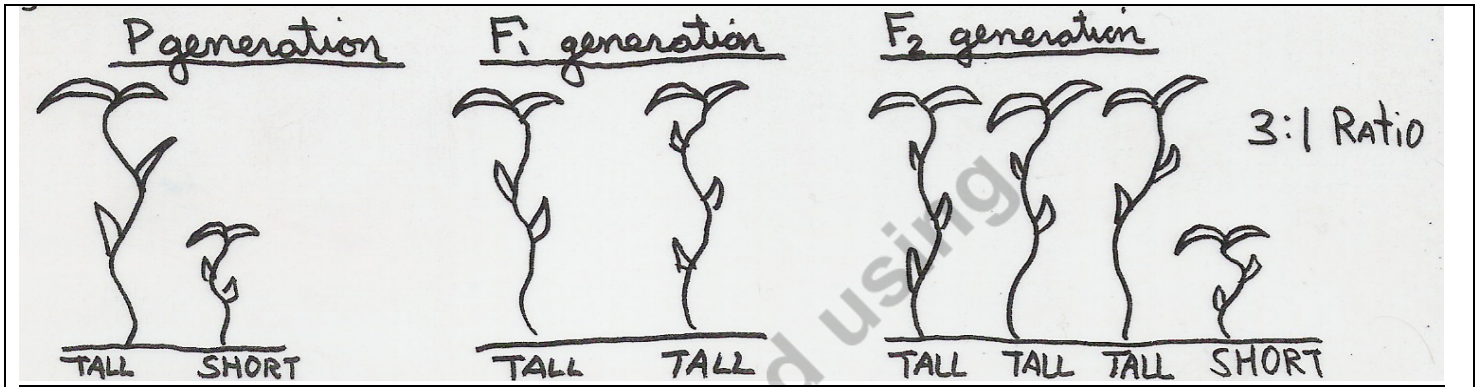


Please decorate the stick figure below with some of the health and other effects that smoking can give you.



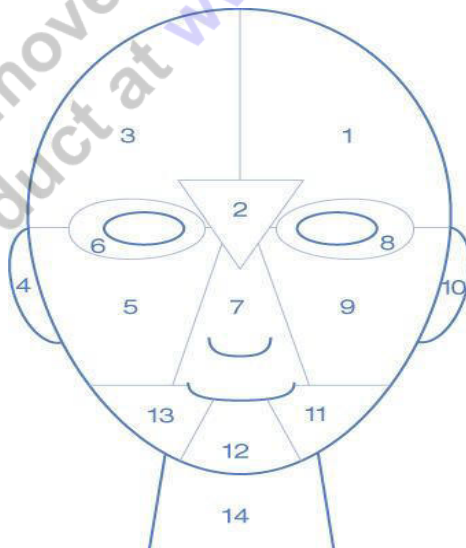
What is the difference between mitosis and meiosis? Please focus on the two events that make you genetically unique?



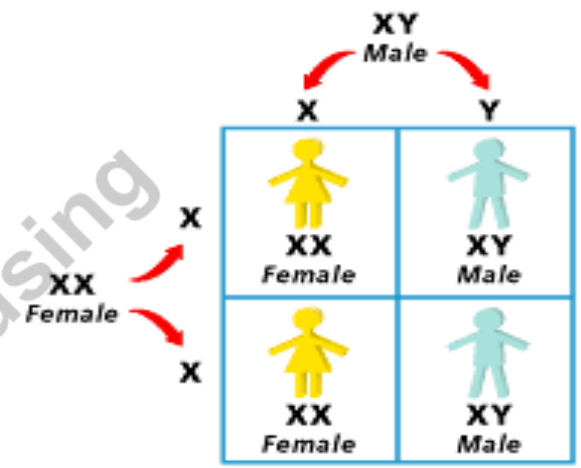


Please describe the importance of the diagram above. What is so significant when comparing the F₁ and F₂ generation?

Please create a self portrait below using some of the genetic phenotypes that we have learned.



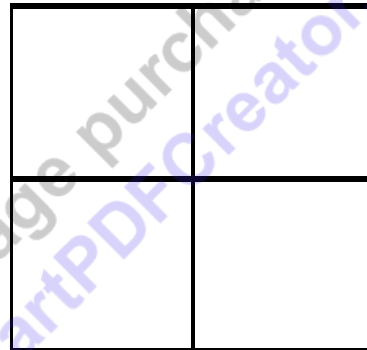
Please use the diagram on the right to describe which gender controls the sex of the child in humans. Please respond on the lines below.



Fill out the Punnett Square below and describe the probable outcomes.

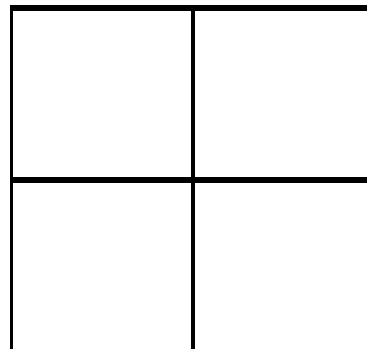
1.) Two heterozygous parents.
 (Brown is dominant) (Blue is recessive)
 BB-Brown eyes
 Bb-Brown eyes
 bb-Blue eyes

What is the probability of brown eyes? _____



2.) One heterozygous parent and one homozygous recessive parent.
 (Brown is dominant) (Blue is recessive)
 BB-Brown eyes
 Bb-Brown eyes
 bb-Blue eyes

What is the probability of brown eyes? _____



3.) One homozygous dominant parent, and one homozygous recessive.

(Brown is dominant) (Blue is recessive)

BB-Brown eyes

Bb-Brown eyes

bb-Blue eyes

What is the probability of brown eyes? _____

4.) Two homozygous recessive parents.

(Brown is dominant) (Blue is recessive)

BB-Brown eyes

Bb-Brown eyes

bb-Blue eyes

What is the probability of brown eyes? _____

Please complete the dihybrid cross below and record the probability of the outcomes in the ratio part at the bottom.

Heterozygous X Heterozygous

Heterozygous parent (PpSs)

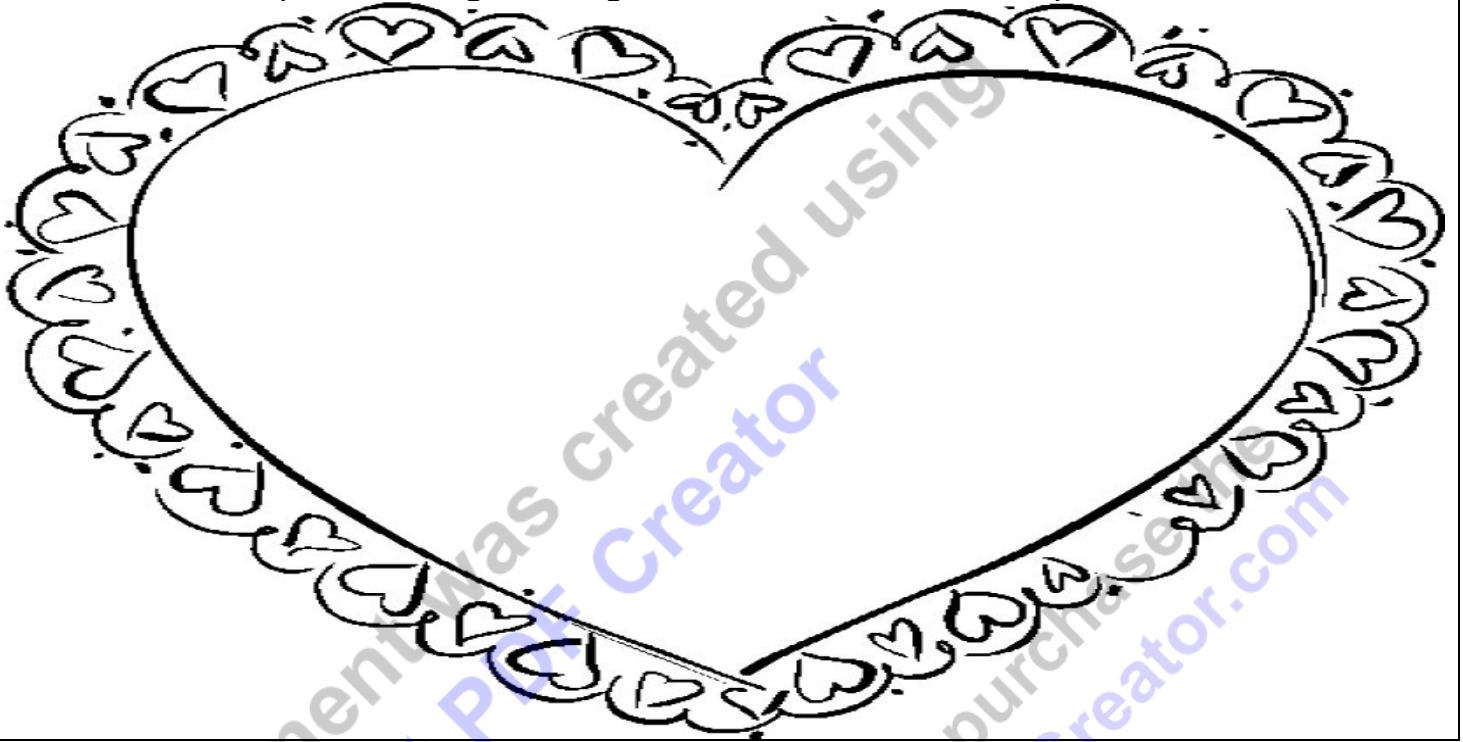
	PS	Ps	pS	ps
Heterozygous parent (PpSs)	PS		PpSS	
	Ps			
	pS			
	ps			

P – Purple p- White S – Smooth s - wrinkled
--

Phenotype: Purple Smooth : _____ : _____ : _____

Ratio: _____ : _____ : _____ : _____

Please reflect upon learning about genetic disorders in the space below.



Please list some of the bio-ethics involved in human cloning and stem cell research in the boxes below.

Embryonic Stem Cells

Human and Animal Cloning

Please describe some of the reasons why the above issues could be beneficial to science and bio-technology / bio-agriculture

GATTACA

(class Investigation Grade)

Name:

Due: With OFE

This worksheet is worth a class investigation grade and should be completed upon the conclusion of the film. Please put the same amount of effort into this assignment as Antoine/Gerome put into following his dream.

What were some of the negative impacts that faced Vincent (Gerome) (Ethan Hawke) because of his DNA/and being considered an Invalid?

-
-
- How was DNA used to discriminate in the movie?
-

Describe his work ethic. Make sure to list specific examples from the movie? How hard must he work to overcome the problems facing him?

How does his work ethic compare to your own?

What were some ways that DNA was collected?

What do you feel was the message in the movie GATTACA?

What does GATTACA stand for?

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