8th Grade, Lewis County Middle School NTI Day 15

Contents:

- **Language Arts**
- **Math**
- **Science**
- **Social Studies**

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Argumentative Writing 5 - Day 15 - 100 points

One key strategy for strengthening an argument is to try to anticipate objections the audience may have to ideas and address those objections.
Here are transitions that can signal refuting arguments or objections of an audience.
Although
Admittedly
Certainly
Despite
Granted
In all fairness
Nonetheless
Of course

Situation: This student is writing to inform the principal of ways to let people in the community know about the many wonderful things that happen at school.

What are four concerns a principal may have about putting up an electronic sign in front of the school? Think as a principal might think.

1. Concern: The sign may be expensive to install.
    a. Counterargument: It would be worth the cost because it would reduce the number of paper notes that teachers would have to send home.
2. Concern:
    a. Counterargument:
3.
    a. Counterargument:
4.
    a. Counterargument:

Finish the paragraph by filling in the blanks and addressing at least three concerns. List the concern the principal may have and then counter it.

We need to put an electronic sign in front of our school. You may have some concerns. Although an electronic sign may <u>be expensive to install at first</u>, it will ultimately <u>be worth the cost because it could reduce the money spent on paper copies of announcements teachers have to send home</u>. Additionally, you may be worried that _____, but_____.
Admittedly, the sign may _____, but nevertheless____
_____.
Altogether, despite the concerns regarding the installation of the electronic sign, _____
_____
_____.

Reminder, slope and rate of change are the same and Y intercept and initial value are the same.
Equation of a line in slope-intercept form $Y=mx+b$ where m=slope and b=Y-intercept.

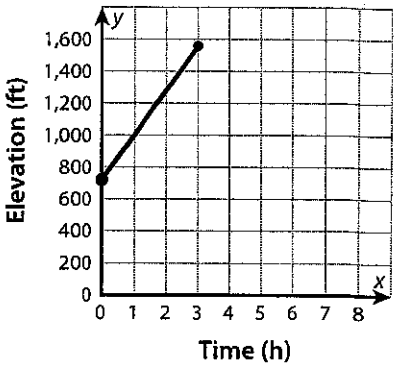
Methods of finding slope Graph $m=\frac{rise}{run}$ Table $m=\frac{\text{change in Y}}{\text{change in X}}$ Equation m = coefficient of X

Interpreting a Linear Function

Remember, all Y-intercepts have an X-value of 0.

➤ **Interpret the linear function to solve the problems. Show your work.**

1 A group of volunteers is spending a week cleaning up the trails in the Hudson Highlands. On day 2 the volunteers begin at the point on the trail where they ended the day before. The graph shows their elevation, in feet, as a function of the number of hours they work to clean the trails.



a. What does the ordered pair (1, 1000) on the graph represent?

b. The graph begins at 720 on the *y*-axis. What does this value represent? Is this the rate of change or the initial value?

c. By how many feet does the elevation increase for one hour of work? What does this value represent, rate of change or initial value?

d. What is the equation that represents this function?

2 The table shows number of people as a function of time in hours. Write an equation for the function

Hours	Number of People
1	150
3	250
5	350

Day 15

Interpreting a Linear Function *continued*

3 Amber plans to cook a turkey and macaroni and cheese for a special dinner. Since she will need to use the oven for both dishes, and they won't both fit in the oven at the same time, she has to determine how much time all the cooking will take. The macaroni and cheese will take a set amount of time, while the turkey takes a certain number of minutes per pound that the turkey weighs.

The equation models the total cooking time Amber will need to prepare her dishes.

$$y = 15x + 40$$

a. What do variables x and y represent?

b. What does the value 40 represent?

c. What does the rate of change represent?

d. What is the total cooking time for just the turkey if it weighs 12 pounds?

Day 15

UNIT 15

10.1 Growth and Cell Reproduction

Jones 8th grade

Growth is a characteristic of all living things. You started out as a single cell. That cell quickly divided into two cells. Two cells became four and four became eight. Eventually, you grew into an organism made of *billions* of cells. As you continue to grow, your cells will divide to make more and more cells. Also, your cells divide to replace cells that have died, or to repair damaged tissues. Each new cell contains an exact copy of the DNA that's found in all of your body cells. How do cells divide to make exact copies of themselves?

What is cell division?

Cells reproduce by dividing

Most of the cells in your body reproduce by dividing into two cells called *daughter cells*. Each daughter cell contains an exact copy of the DNA found in the original (parent) cell (Figure 10.1). The process of one cell dividing into two daughter cells is called **cell division**. Most cells reproduce by cell division.

The process of one cell dividing into two daughter cells is called cell division. Each daughter cell contains an exact copy of the DNA found in the parent cell.

Cell division in prokaryotic cells

As you learned earlier, prokaryotic cells like bacteria do not have a nucleus. Their DNA is found bunched up in the cytoplasm. Because of this, their cell division is simpler than the division of eukaryotic cells. Bacteria reproduce by splitting in two. Each daughter cell contains one copy of the DNA from the original cell.

VOCABULARY

cell division - the process of one cell dividing into two daughter cells.

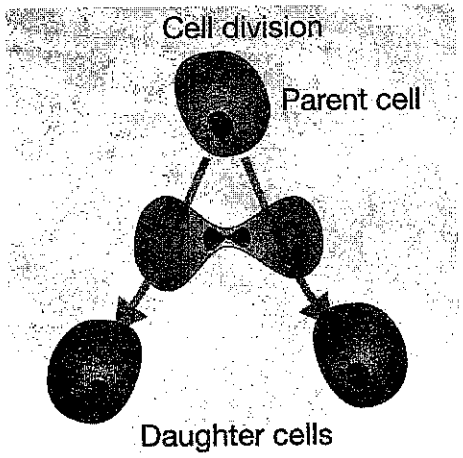


Figure 10.1: *Most of the cells in your body reproduce by dividing into two daughter cells.*

MY JOURNAL

Most organisms grow by producing more cells. Why couldn't an organism grow simply by allowing its cells to get larger and larger? Write your thoughts on this question in your notebook. You may wish to review earlier chapters before you answer.

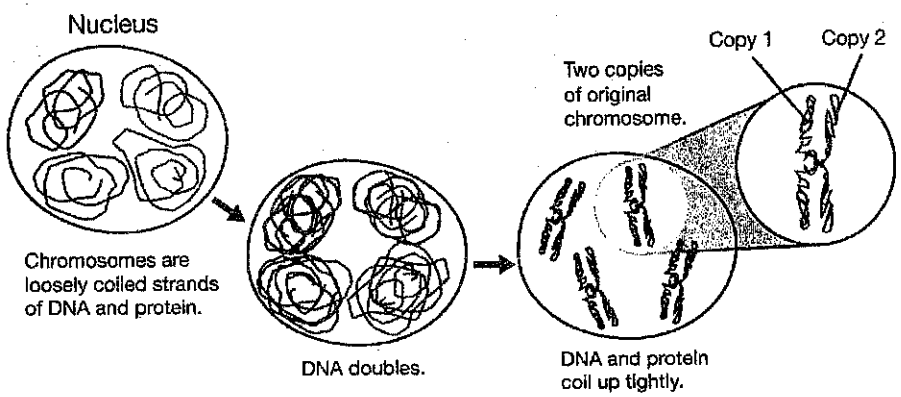
Chromosomes

What are chromosomes? Eukaryotic cells are usually larger and more complex than prokaryotic cells. The DNA of a eukaryotic cell is found in the nucleus. That DNA is organized into structures called chromosomes. A **chromosome** is a structure made of DNA and protein in the nucleus of a eukaryotic cell. Chromosomes organize DNA into distinct units. Different organisms have different numbers of chromosomes (Figure 10.2). Humans for example, have 46 chromosomes. The proteins in a chromosome help support its structure and function. But the genetic information of the cell is stored in the DNA.

VOCABULARY

chromosome - a structure made of DNA and protein in the nucleus of a eukaryotic cell.

Chromosome doubling Individual chromosomes are not clearly visible under a microscope until just before a cell begins to divide. Before cell division, chromosomes exist as long strands of DNA loosely coiled in the nucleus. Just before cell division begins, the amount of DNA doubles and so do the chromosomes. The DNA and protein in the doubled chromosomes coil up tightly. Each doubled chromosome consists of two copies of the original chromosome joined at the center.



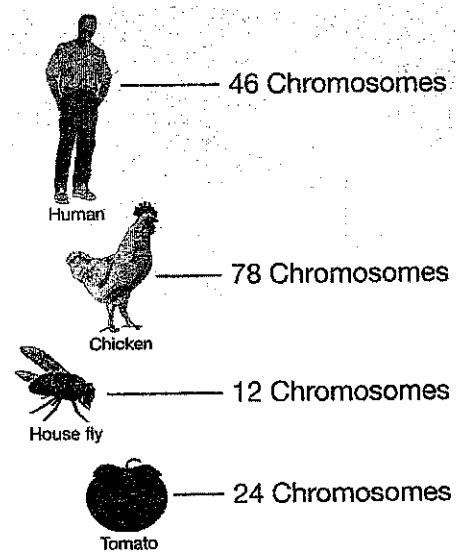


Figure 10.2: *Different organisms have different numbers of chromosomes. Does the number of chromosomes have anything to do with the complexity of the organism?*

The cell cycle

The life cycle of a cell As you grow from an infant to an adult, you pass through different stages of your life cycle. Similarly, a cell passes through different stages of its life. The life cycle of a cell is called the cell cycle. The **cell cycle** is the period of time from the beginning of one cell division to the beginning of the next. It consists of three stages: interphase, mitosis, and cytokinesis (Figure 10.3).

Interphase The longest stage of the cell cycle is called interphase. **Interphase** is the stage that occurs in between cell divisions. During interphase the cell grows and develops and performs its functions. Toward the end of interphase (just before the cell begins to divide), the amount of DNA doubles. Organelles of the cytoplasm (like mitochondria) also double in number.

Mitosis The second stage of the cell cycle is called mitosis. **Mitosis** is the process in cell division where the nucleus divides into two nuclei, each with an identical set of chromosomes. Mitosis is divided into four phases: *prophase, metaphase, anaphase,* and *telophase.* The illustration on the facing page shows what happens during each phase.

Cytokinesis The shortest stage of the cell cycle is called cytokinesis. In **cytokinesis**, the cytoplasm and its organelles divide into two daughter cells. Each daughter cell contains a nucleus with an identical set of chromosomes. The two daughter cells then start their own cycles, beginning again with the interphase stage.

The cell cycle results in two daughter cells with identical sets of chromosomes.

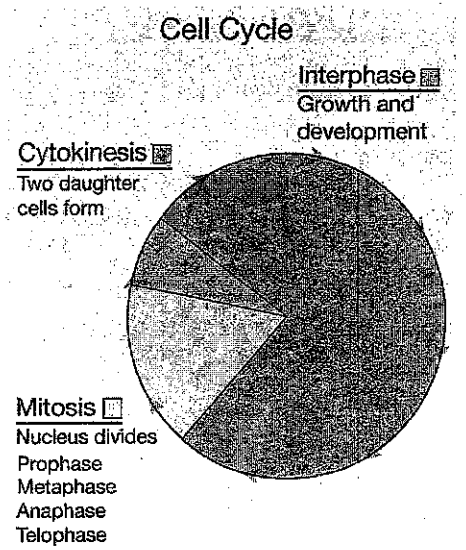


Figure 10.3: *The cell cycle consists of three phases.*

VOCABULARY

cell cycle - the period of time from the beginning of one cell division to the beginning of the next.

interphase - the stage of the cell cycle that occurs between cell divisions.

mitosis - the process of cell division where the nucleus divides into two nuclei.

cytokinesis - the process where the cytoplasm and its organelles divide into two daughter cells.

Jones 8th grade Science

NTI Day 15-Reproduction-Growth and Cell Reproduction.

Materials

- CPO life science Ebook that is uploaded into google classroom
- 5 question quiz

Task

- Students read pages 196-198 in chapter 10.
- Students complete a 5 question quiz.

Quiz-Section 10.1

1. _____is the process of cell reproduction.

a) Fertilization
b) Cell division
c) Cytokinesis
d) Sexual reproduction
e) Mitosis

2. Made up of protein and DNA,_____contain genetic information within a eukaryotic cell.

a) Fertilization
b) Cell division
c) Chromosomes
d) Sexual reproduction
e) Sex cells

3. The continuous sequence of events from the beginning of one cell division to the next is the _____.

a) Fertilization
b) Cell division
c) Chromosomes
d) Sexual reproduction
e) Cell cycle

4. During _____ , the cell grows and develops.

a) Fertilization
b) Cell division
c) Mitosis
d) Interphase
e) Cytokinesis

5. _____ is the process of eukaryotic nuclear division in which two nuclei with identical sets of chromosomes are formed.

a) Fertilization
b) Cell division
c) Mitosis
d) Interphase
e) Cytokinesis

Kansas-Nebraska Act: The Law that Ripped America in Two

By Smithsonian.com, adapted by Newsela staff on 05.12.17
Word Count **992**
Level **1030L**

A painting of John Brown and the anti-slavery movement in Kansas. Attacks on pro-slavery residents were led by Brown in Lawrence, Kansas. Photo from Wikimedia

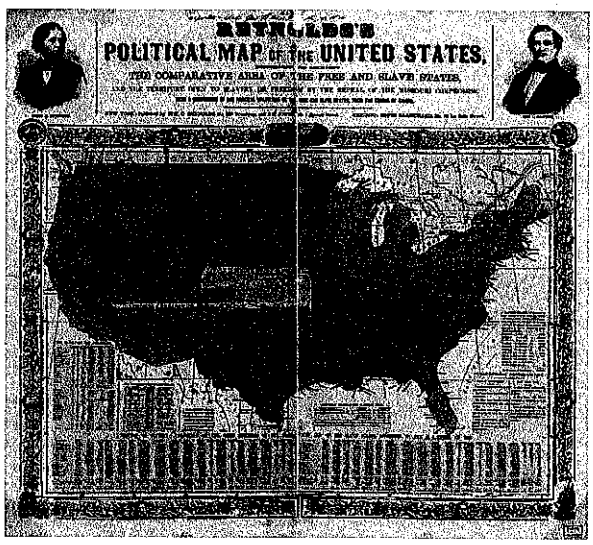
On May 24, 1856, anti-slavery crusader John Brown rode into the Pottawatomie Valley in the new territory of Kansas. Brown was determined to send a message to his pro-slavery neighbors. With him were seven men, including four of his sons. An hour before midnight, Brown came to the cabin of James Doyle and shot him dead. After killing two of Doyle's sons, the group moved on to kill two other men.

The five pro-slavery settlers were not merely victims of Brown's violence. In some ways, they were also victims of a law known as the Kansas-Nebraska Act. Historians William and Bruce Catton have described that law as possibly "the most fateful single piece of legislation in American history."

The Kansas-Nebraska Act was passed by Congress in 1854. Ironically, it was meant to quiet the furious national argument over slavery. The law gave the new Western territories the right to decide on their own whether to accept the practice of slavery. However, it also inflamed the anger

it was intended to calm by repealing the Missouri Compromise of 1820. The Missouri Compromise had outlawed slavery in all territories north of Missouri's southern border, except for Missouri itself.

Senator Douglas pushes for law



Senator Stephen A. Douglas of Illinois was the man behind the Kansas-Nebraska Act. Douglas was eager to see the United States expand. For him, arguments over whether new Western territories should permit slavery only got in the way of that goal. Douglas saw his law as a way of making peace between pro-slavery Southern states and anti-slavery Northern ones.

Early in 1854, Douglas asked Congress to approve the establishment of the Nebraska Territory in the vast wilderness west of Missouri and Iowa. Douglas had sought such approval before. However, he had been unable to win sufficient votes to get his way, due to the resistance of Southern congressmen.

For Southerners, the problem was the Missouri Compromise. If Nebraska was made a territory with the compromise in place, it would be slave-free. Once that happened, slave-state Missouri would be bordered on three sides by slave-free states and territories. Missouri's strongly pro-slavery senator, David Atchison, was completely opposed to the idea. Like many other Southerners, Atchison wanted Nebraska opened to slavery, and he vowed to see it "sink in hell" if it were not.

Southerners make a deal

Douglas decided to rework his bill, which now called for the division of Nebraska into two territories, one of them being Kansas. To win Southern support, Douglas agreed to a repeal of the Missouri Compromise. This decision to scrap the Compromise was widely condemned by those opposed to slavery. Many Northerners saw the Missouri Compromise as an important step toward the eventual phasing out of slavery. For them, the Kansas-Nebraska bill was a terrible betrayal.

Douglas saw the Kansas-Nebraska bill as a way to make peace between the South and North, but the reverse turned out to be true. The South was determined to have Kansas become the 16th slave state, and the North proved equally determined to keep Kansas free.

When Northern anti-slavery settlers began pouring into Kansas, hoping to tilt the upcoming vote, pro-slavery Missourians fought back. Thousands of Missourians crossed the border into Kansas in March 1855. Once there, they illegally elected a pro-slavery territorial government. In response, those who opposed slavery, named Free-Soilers, set up their own government.

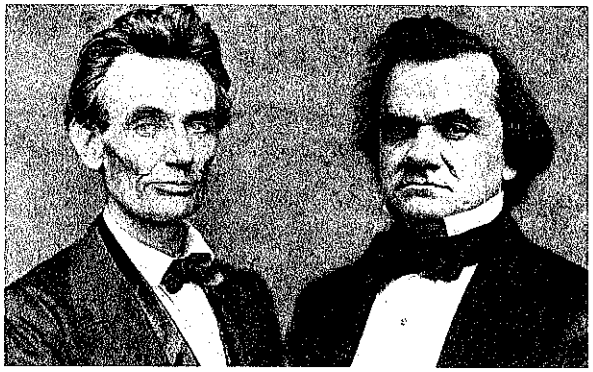
Deadly violence breaks out

At this point tensions in Kansas were waiting to explode. In 1856, a pro-slavery sheriff, Samuel Jones, was wounded by an unknown attacker while visiting the Free-Soil capital of Lawrence,

Kansas. Soon afterward, a pro-slavery posse descended on Lawrence, and proceeded to sack the town.

Northerners were outraged, and among those who sprang into action was the fiery abolitionist John Brown. Indeed, Brown was on his way to help defend Lawrence when he learned he was too late to save it. Only then did he and his men decide to attack the unfortunate Doyles and their neighbors.

The response to Brown's killing spree was savage. Pro-slavery settlers in Kansas were furious and fearful, and soon there was a bloody outbreak of shootings and burnings directed at Free-Soilers.



The determination to make Kansas a slave state only grew stronger on the pro-slavery side. Indeed, the issue took on great importance for the South as a whole. "The fate of the South is to be decided with the Kansas issue," wrote South Carolina congressman Preston Brooks in March 1856.

Kansas slavery constitution rejected

When it finally came time to vote, Kansans were given a choice between a constitution with slavery and a constitution without it. However, the constitution without it contained a clause allowing slaveholders already in the territory to keep their slaves, as well as the slaves' offspring. Free-Soilers saw it as a choice not between slavery and its absence, but between slavery on a small scale and on a large scale. Furious, they refused to take part in the vote.

In the end, Congress decided not to accept the slave-state constitution submitted by Kansas. Given how it was arrived at, it could not have represented the will of most Kansans. Eventually, those who opposed slavery outnumbered those in favor, and on January 29, 1861, Kansas was admitted to the Union as a free state.

Even so, the fight over slavery was far from settled, and indeed the Kansas-Nebraska Act had only managed to increase tensions between the North and South. Less than three months after Kansas achieved statehood, the Civil War broke out and the nation was torn in two.

Quiz

1 Which statement would be MOST important to include in a summary of the Kansas-Nebraska Act?

(A) The Kansas-Nebraska Act was created by Senator Stephen A. Douglas, and he viewed it as necessary to continuing westward expansion.

(B) The Kansas-Nebraska Act was initially opposed by Senator David Atchison, and he refused to cooperate unless Nebraska was opened to slavery.

(C) The Kansas-Nebraska Act was meant to make peace between the South and the North, but it increased tension and violence.

(D) The Kansas-Nebraska Act offered Kansans a choice between two constitutions, but slavery was permitted by both of them.

2 Which two of the following sentences from the article support central ideas?

1. *The law gave the new Western territories the right to decide on their own whether to accept the practice of slavery.*
2. *The Missouri Compromise had outlawed slavery in all territories north of Missouri's southern border, except for Missouri itself.*
3. *The South was determined to have Kansas become the 16th slave state, and the North proved equally determined to keep Kansas free.*
4. *Soon afterward, a pro-slavery posse descended on Lawrence, and proceeded to sack the town.*

(A) 1 and 3

(B) 1 and 4

(C) 2 and 3

(D) 2 and 4

3 How did Stephen A. Douglas convey the importance of passing the Kansas-Nebraska Act?

(A) by promoting the profitability of Kansas

(B) by appealing to anti-slavery Northern states

(C) by promising that Nebraska would allow slavery

(D) by agreeing to repeal the Missouri Compromise

4 How did the viewpoint of John Brown compare with the viewpoint of most Free-Soilers?

(A) Both were interested in preventing the passage of the Kansas-Nebraska Act, but Free-Soilers also wanted to protect the town of Lawrence.

(B) Both were furious about the possibility of slavery in territories such as Kansas, but Brown believed violence was necessary to eliminate it.

(C) Brown wanted settlers in Kansas to be allowed to vote on the issue of slavery, but Free-Soilers thought a vote was unnecessary.

(D) Brown wanted to send a message to pro-slavery settlers that slavery would not be tolerated, but Free-Soilers wanted to compromise.