3L Week 7

Readings and Instructions

Please keep this packet – you may need to refer to some of this information in future weeks.

MATH INSTRUCTIONS

Ms. Medcalf's Math Scholars-

Here are things to keep in mind:

1. The checklist is a guideline to make sure you complete everything you are asked to complete within the week. We encourage you to do as much as you can on any assignment.
2. Please complete ALL PROBLEMS for each problem set. You are required to complete all 30 problems in each problem set for every lesson going forward.
3. There may be extra homework sheets attached within your packet in case anyone needs them.
4. Be mindful of your own math course. Whichever math textbook you have is the math work you should follow in the checklist.
5. **Please put your first and last name AND your math teacher's name (Ms.** Medcalf) at the top of EVERY math page! This will help the staff who sort the work to ensure that I get all the work from my scholars.

For Week 7 of distance learning (May 15th – May 21st),

Ms. Medcalf's classes should complete all the problems in the sets for:

3L Saxon 8/7: Lessons 67, 68, 69

3L Algebra ½: Lessons 97, 98, 99

For additional resources to help you through the lessons, take a look at our website www.parnassusteachers.com; the password is: Pegasus. Click on "School of Logic" to find resources organized by subject.

Feel free to email me at medcalf@parnassusprep.com, or call/text me at 612-465-9631 with any questions you have about anything school related.

It is a good day for a good day. Ms. Medcalf

ENGLISH INSTRUCTIONS

3L English- Ms. Rossi
May 15th-21st

Clarifications and Notes

<u>DO NOT</u> turn in your Frederick Douglass book this week! You WILL need it for next week.

Friday: Read Chapter 10B (pages 123-144). You will do the questions tomorrow for this long chapter.

Monday: Do all of the Closer Look questions for Chapter 10B on page 145 on your seperate sheet of paper to turn in by next Friday.

Tuesday: Read Chapter 11 (pages 148-163). You will do the questions tomorrow for this long chapter.

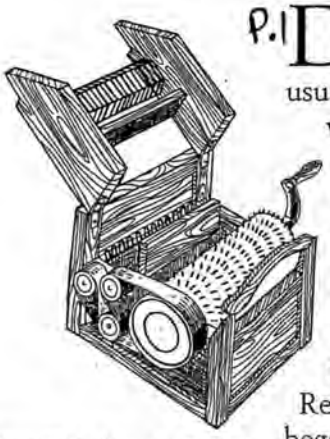
Wednesday: Answer all of the Closer Look questions on page 164 about Chapter 11.

Thursday: Epistolary Form: Read page 165 thoroughly. Wheras on the last writing assignment you were writing as any citizen against slavery, this time you are very specifically writing in the perspective of a former slave. This letter should be at least 8 sentences long, and written in first person perspective.

HISTORY READINGS

INDUSTRY: EARLY REVOLUTION 1708–1815

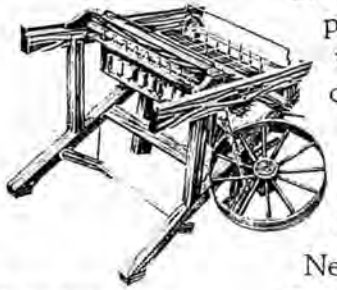
The Industrial Revolution began in Britain in the cotton industry. It brought a wealth of change—a rapid growth of cities, mines, canals, and factories.



The cotton gin was patented by Eli Whitney (1765–1825), in 1794. It was used to remove seeds and impurities from cotton fibers.

P.1 During the early 1700s, most people made goods in a traditional way, usually by hand, at home or in small workshops. The men were carpenters, blacksmiths, and weavers. Others were farm laborers, who worked on the land to grow crops to feed their families. Women worked at home, looking after the animals, cleaning sheep fleeces, and spinning wool into yarn for clothes. The Industrial Revolution changed all this. Many people began to move into towns to work for wages where employers were starting larger-scale production to increase profit.

P.2 The Industrial Revolution began in Britain in the textile industry. Machines, powered by waterwheels, speeded up the spinning, weaving, and finishing of cloth. Larger mills and factories were built. New towns sprang up in areas such as Yorkshire and Staffordshire in England, and the Ruhr Valley in Germany. Industrial cities such as Newcastle, Lille, Leipzig, and Rotterdam expanded rapidly. A network of canals was built to transport goods efficiently. Soon, steam engines were developed. Newcomen built a steam engine in 1712 for pumping water from mines, but it was not until 1774 that James Watt and Matthew Boulton built engines to power machines. In 1709, Abraham Darby began to smelt iron in a blast furnace using coke.



▲ The first multireel thread-spinning machine, the spinning jenny, was invented by James Hargreaves (1720–1778) in 1764.

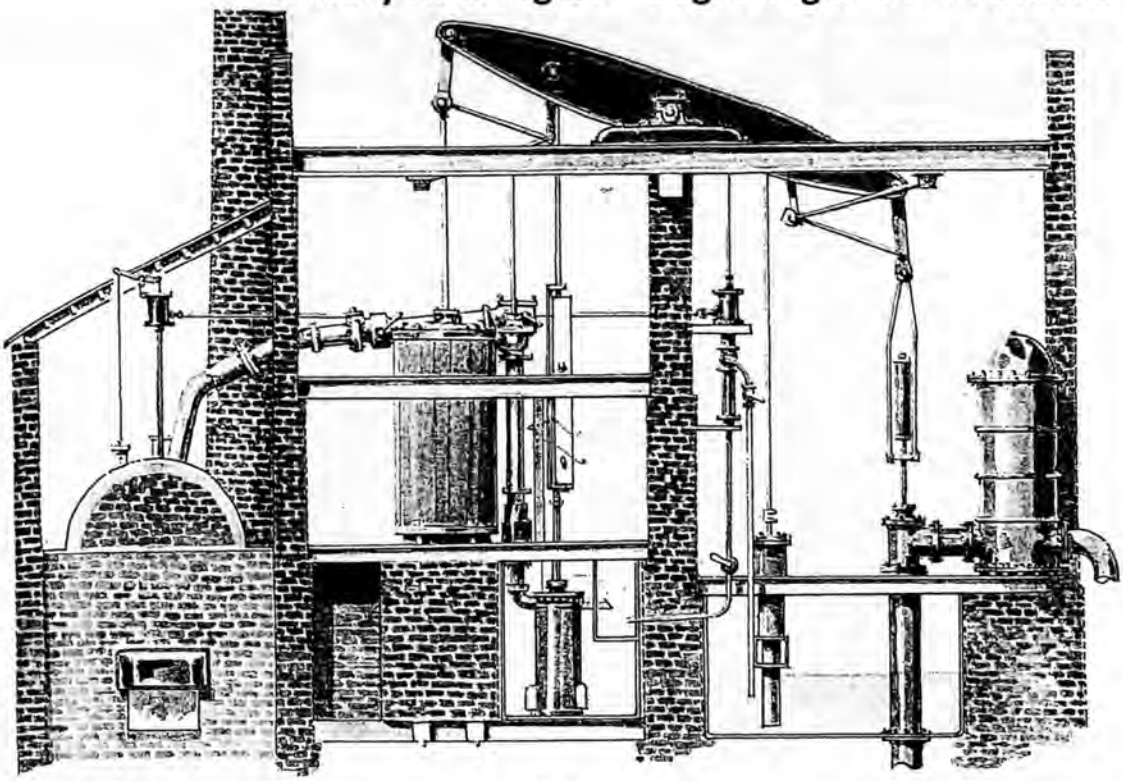
The fantail windmill was invented by Edmund Lee in 1745. The top rotated, steered by the fantail, so that the sails always turned toward the wind. It was used to pump water and grind grain.

P.3 Britain became known as the "workshop of the world." The Industrial Revolution began there because, unlike much of Europe, it was not ravaged by war. It had plentiful supplies of iron ore and coal; it was quick to develop a canal system; it had plenty of cheap labor (because of enclosures of farmland); and plenty of money was available from colonial profits.

▼ This is a flax mill from around 1800, where flax fibers were spun and woven into linen.

Source: The Kingfisher History Encyclopedia. New York: Kingfisher, 2004.

3L History Reading 69 – Beginning of the Industrial Revolution



engine, built by Thomas Newcomen (1663–1729) in 1712, pumped water out of mines. Later designs were used to power factories.

KEY DATES

1709 Abraham Darby invents blast furnace
1712 Newcomen builds a steam engine for use in mines
1730 John Kay introduces mechanical textile machines
1759 Wedgwood's porcelain factory opens
1764 Hargreaves invents spinning jenny
1769 Thomas Arkwright invents a water-powered spinning machine
1769 Nicolas Cugnot builds a steam-powered vehicle for the French army
1773 Arkwright builds his first spinning mill (factory)
1794 Eli Whitney patents the cotton gin
1807 Robert Fulton's steamboat makes first trip

.4 BRITAIN'S INDUSTRY BOOMS

By 1815, Britain's output of coal, textiles, and metals was equal to that of the rest of Europe. It had taken a century to reach that point. Tremendous social changes took place as people moved from the country to the towns—families and villages broke up, and workers were exploited by powerful factory owners. Many children died working in mines and mills. A new class of rich industrialists gradually evolved, as well as managers and professionals. London became the financial capital of Europe. Manufactured products were exported around the world, and raw materials such as silk, cotton, and timber were carried to new ports such as Liverpool and Glasgow, then taken inland by canal.

P.5 The Agricultural and early Industrial revolutions went hand in hand. The factories supplied new machines and tools to farmers, and farmers became more like businessmen who sold their products to growing populations in the towns. The personal relationships of local country life and local trade gave way to financial deals, middlemen, and contracts. The "dark, satanic mills" commented on by the poet William Blake were taking over.

The invention of the steam engine allowed railroads to be built to transport coal from mines to factories. In 1812, John Blenkinsop (1783–1831) designed steam rack locomotives that were used on the Middleton Railway in England.

3L History Reading 69 – Beginning of the Industrial Revolution

Many factors aided industrial growth.

The Industrial Revolution began in the middle 1700's in the lowland parts of eastern England and southern Scotland.

P.6

Changes in farming led the way.

The Industrial Revolution might not have taken place without the dramatic improvements in farming that began in the early 1700's. This agricultural revolution started sooner than the Industrial Revolution. Then, once industrialization began, the two revolutions went hand in hand.

The enclosure movement By 1700, small farms were disappearing in Great Britain. Wealthy landowners were buying up much of the land that village farmers had once worked. Then the landowners rented fields to families of tenant farmers who worked the land. This process was called **enclosure**, because the new owner sometimes put up a fence or hedge around his land.

Crop rotation The most revolutionary discovery of these scientific farmers was a new system of **crop rotation**. For centuries, the chief way to keep a field fertile had been to let it lie fallow every two or three years.

After much experimenting, the gentleman farmer Viscount Charles Townshend found that it was not necessary to let the land lie fallow. The secret, he told people, was to rotate crops. One year, a farmer might plant a field with wheat or barley, which tended to wear out the soil. The next year, the farmer could plant turnips or clover, which restored the soil.

Improved livestock Thanks to the efforts of other farmers, raising livestock also became more productive. For example, in the 1700's, Robert Bakewell began trying to raise larger sheep to provide more meat and wool. By allowing only the best animals to breed, he increased the weight of his sheep and also greatly improved the taste of the mutton.

Effects on population Scientific farming had a twofold effect. Better livestock and rising crop production meant more food. Fewer people went hungry, and nutrition improved.

On the other hand, the enclosure movement forced many small farmers off the land. Many lost fields that their families had worked for centuries. Some simply left Great Britain and moved to the British colonies in North America. Others crowded into British cities looking for work. They became the labor force for the jobs in manufacturing that were becoming available.

A rise in population helped industry.

In the 100 years from 1750 to 1850, the numbers increased at a phenomenal rate. By 1850, there were about 266 million Europeans. It had taken 400 years from 1350 for the European population to double. Then it nearly doubled again in just a century.

P.7

Great Britain had many advantages.

In 1700, Great Britain was neither the largest country in Europe nor the smallest. It was, however, rich in all the factors needed for industry.

Abundant natural resources The Industrial Revolution depended on three important natural resources. Two of these were waterpower and coal, which supplied the energy for the new machines. The third was iron ore, used for machines, tools, and buildings. Great Britain was rich in all three.

A favorable geography Geography also gave Great Britain an advantage over other countries. An island nation with many fine harbors, its fleet of more than 6,000 merchant ships sailed to almost every part of the globe. This overseas trade gave Britain access to raw materials and markets. Both were essential to industrial growth. Trade also gave Britain a wealthy class of shipowners and merchants who had money to spare for new projects at home.

A favorable climate for new ideas In the 1700's, British people in many walks of life were interested in science and technology. The Royal Society, founded in London in 1660, had become a world-famous "club" for the exchange of scientific ideas and practical inventions.

New ideas were not only encouraged but also rewarded. Business people were willing to invest in the manufacture of new inventions. In fact, the business person and the inventor were often the same person.

A good banking system By the 1700's, Great Britain had the most highly developed banking system in Europe. Making loans was by far the most important service of British banks. By lending money at reasonable interest rates, banks encouraged business people to invest in better machinery, build new factories, and expand their operations.

Political stability Although Britain took part in many wars during the 1700's, none was fought on British soil. For ordinary people, it was a century of peace. This freedom from war and bloodshed gave Britain a tremendous advantage over its European neighbors. British business people did not have to worry about a hostile army destroying their property.

At the same time, the British government favored economic growth. Merchants and business people had considerable influence in Parliament. The government supported laws that encouraged new investment both at home and abroad.

Source: World History: Perspectives on the Past. Lexington, MA: D.C. Heath and Company, 1988.

3L History Reading 70 – Revolution in Textiles and the Steam Engine

Inventions revolutionized the textile industry.

P.1

Britain had long been one of the leading sheep-raising areas in the world. Raw wool and wool cloth had been Britain's major trade goods as far back as the Middle Ages. All this cloth was produced by hand. Spinners and weavers (mainly women) worked in their own homes, using spinning wheels and hand looms.

British clothmakers produced other fabrics as well as wool. Linen, a cloth woven from the fiber of the flax plant, was popular for lighter-weight clothing. Even more popular was cotton, which was also light but more durable and easier to care for than linen.

Working by hand at their wheels and looms, spinners and weavers could not keep up with the demand for cloth, especially cotton. Since they could not make as much cotton cloth as people wanted to buy, its cost remained relatively high. Cloth merchants saw that they could make greater profits if they found a way to speed up the work of spinning and weaving.

One invention led to another.

P.2

By 1800, six major inventions had totally transformed the cotton industry. The first invention came in 1733, when a watchmaker named John Kay made a shuttle that moved back and forth on wheels. The flying shuttle, as it was called, was little more than a boat-shaped piece of wood to which yarn was attached. Yet it allowed a weaver to work twice as fast.

P.3

Now weavers were working so quickly that spinners could not keep up. A prize was offered to anyone who could produce a better spinning machine. The prize went to a textile worker named James Hargreaves.

In 1764, Hargeaves invented a new spinning wheel. He called it the spinning jenny in honor of his wife. This simple machine allowed one spinner to work six or eight threads at a time. Later models could spin as many as 80 threads at once.

P.4

Both the flying shuttle and the spinning jenny were hand-operated machines. Richard Arkwright's water-frame, invented in 1768, brought a new breakthrough. The water-frame used the waterpower from fast-flowing streams to drive spinning wheels.

P.5

In 1779, Samuel Crompton combined features of the spinning jenny and the water-frame to produce the spinning mule. (It was so named because, just as a mule is the offspring of a horse and a donkey, this machine was the offspring of two inventions.) The mule made thread that was stronger, finer, and more even than earlier spinning machines.

P.6

The water-frame and the spinning mule were too large and expensive for people to use at home. Spinning and weaving slowly stopped being work that families did together in their homes. Instead, wealthy textile merchants set up several of the new machines in large buildings called **factories**. At first, the new factories needed waterpower, so they were built near a stream or waterfall.

P.7

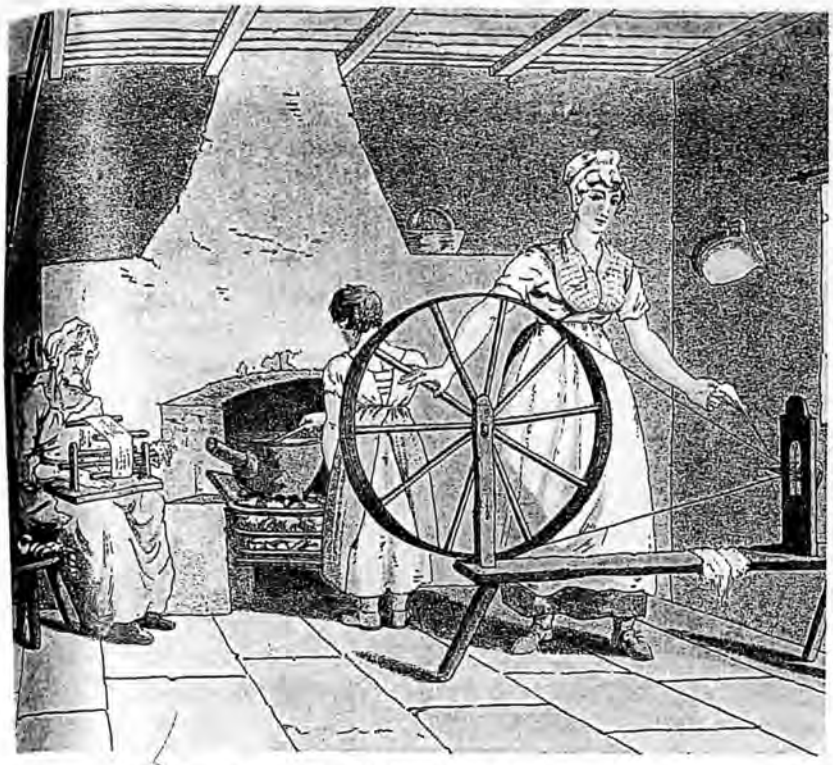
With so many new machines for turning out thread, the weavers soon fell behind in their jobs. In 1785, a new invention promised to restore the balance by speeding up weaving. This was Edmund Cartwright's power loom, run by waterpower. Early power looms were inefficient, but steady improvements meant that by 1813 more than 2,000 were in use. By 1833, there were more than 100,000, most of them in large factories where they rattled away under the same roof as spinning machines. By the late 1700's, both spinners and weavers were working so fast that cotton growers could not keep up with them.

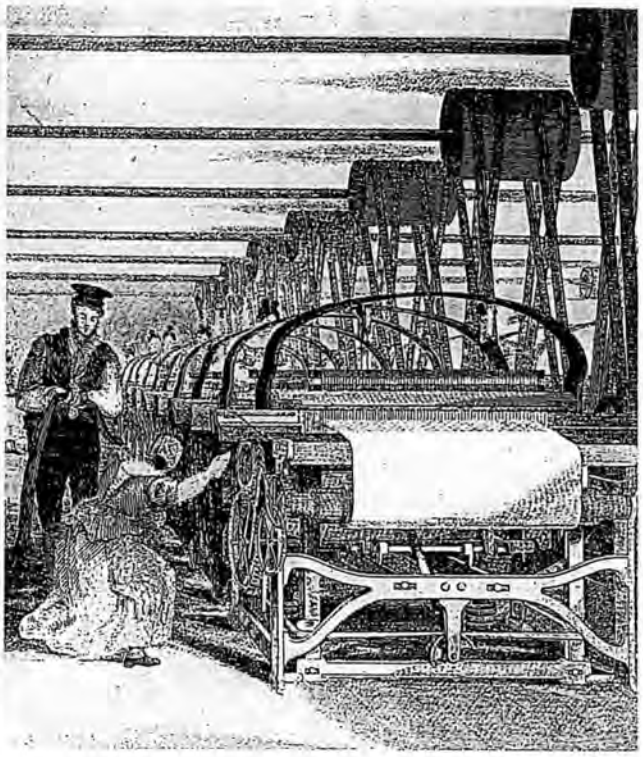
P.8

Much of England's cotton came from the southern part of the United States. In Virginia, Georgia, North Carolina, and South Carolina, farmers raised cotton on large plantations worked by slaves. One of the most time-consuming jobs on the plantation was removing the seeds from the raw cotton. In 1793, American educator Eli Whitney invented a machine to do this tedious chore. His cotton gin made it possible for slaves to pick and clean ten times as much cotton daily as they had before.

Whitney's invention spurred a dramatic increase in American cotton production: from 9,000 bales in 1791 to 987,000 in 1831. Now there was enough raw cotton to keep the factories of Britain humming.

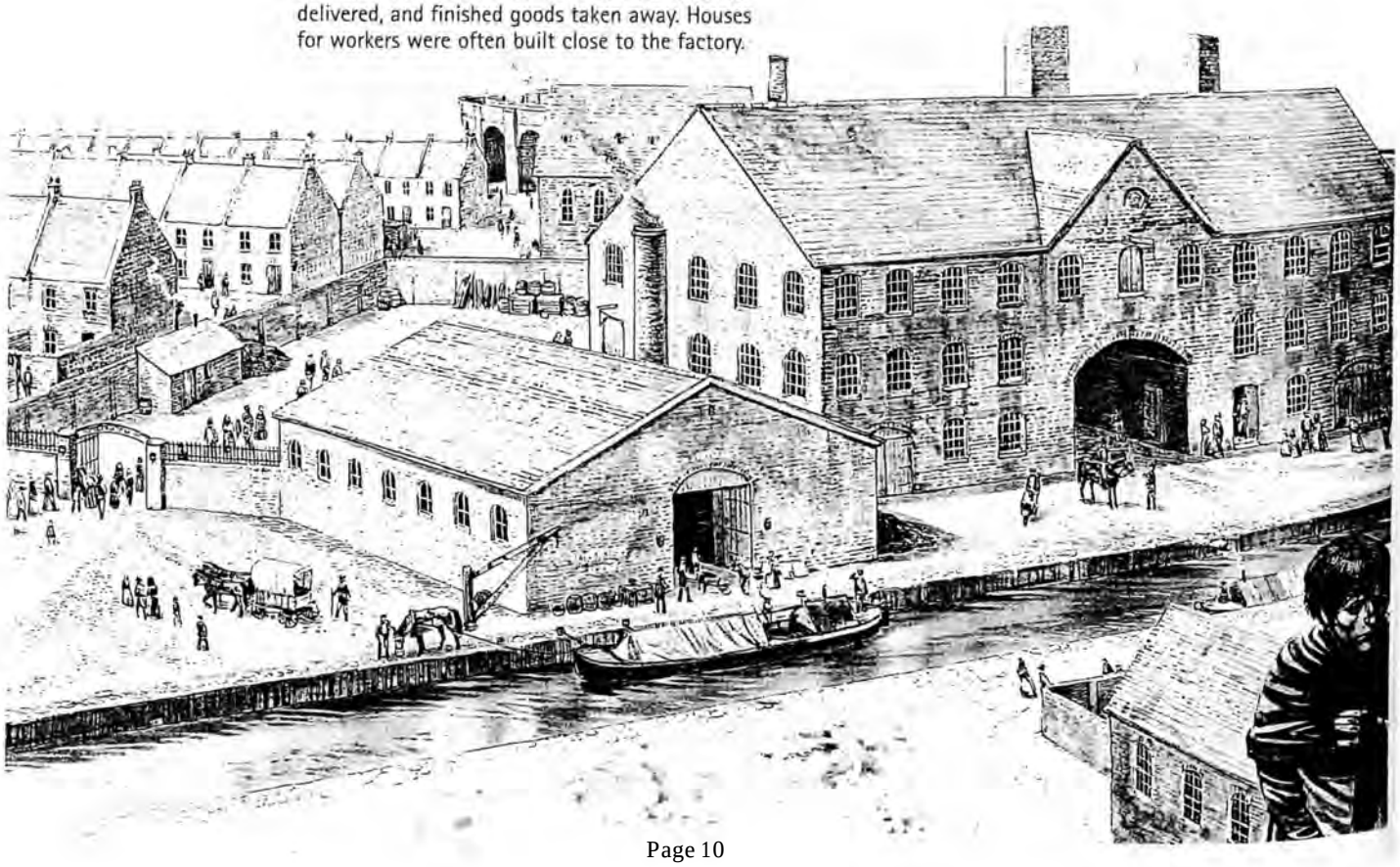
3L History Reading 70 – Revolution in Textiles and the Steam Engine





During the Industrial Revolution, jobs such as spinning and weaving gradually moved out of home workshops (left) and into factories with large, power-driven machines (right).

▼ New factories were built near rivers or canals and railroads This meant that raw materials could be delivered, and finished goods taken away. Houses for workers were often built close to the factory.



3L History Reading 70 – Revolution in Textiles and the Steam Engine

P.9

Thanks to continuous technological improvements in spinning and weaving, however, English merchants used all this cotton and still called for more. The output of cotton cloth from British factories rose from 40 million yards in 1785 to more than 2 billion yards in 1850—a staggering 5,000 percent increase.

Watt improved the steam engine.

P.10

The early power looms and spinning machines had one large drawback. They ran on waterpower, and so every factory that used them had to be near rushing water. Such places were often far from raw materials, workers, or markets. Therefore, many factory owners were eager for a new source of power. They found it in steam.

As early as 1705, coal miners were using steam-powered pumps to remove water from deep mine shafts. However, this early steam engine, called the Newcomen engine after its inventor, worked very slowly. It also took great quantities of fuel, making it expensive to run.

P.11

In 1763, the problem came to the attention of James Watt. Watt was a mathematical instrument maker at the University of Glasgow in Scotland. He helped science professors make the equipment they used in their experiments. Watt pondered the problem for two years. Then, one day in the spring of 1765, as he was strolling along the Glasgow Green, a solution suddenly came to him. Watt saw how to make the steam engine work much faster and more efficiently while burning less fuel.

In the 1770's, Watt went into partnership with a farsighted businessman named Matthew Boulton. Watt and Boulton were both **entrepreneurs** (AHN-truh-pruh-NUHRZ). An entrepreneur is a person who organizes, manages, and takes on the risks of a business.

With Boulton's financial backing, Watt continued to make better and better engines. By 1800, almost 500 steam engines were huffing and puffing in various British factories. James Watt, once a modestly paid craftsman, had become a millionaire.

Watt's improvements made the steam engine much more practical for use in industry. For the first time in history, people had a source of power that could be used anywhere and anytime.

Goldstein, Phyllis, ed. *World History: Perspectives on the Past*. Lexington: D.C. Heath and Company, 1988. Print.

Industry grew and spread to new lands. 3

In 1800, a businessman could walk through his mill and look with pride at the latest model of the Watt steam engine. He could see the power looms and other machines to which it was connected by drive shafts and belts. Yet most of these mechanical wonders had been delivered to the factory by horse-drawn cart. When the businessman finished his inspection, he rode home in a horse-drawn carriage over mud-rutted roads that dated back to the Middle Ages. Great changes, however, were on the way.

Engineers built roads and canals.

Before the Industrial Revolution, the cheapest and most reliable way to travel in England was by water. Besides its good harbors, England also had many navigable rivers. Barges laden with coal, iron, bricks, and other goods floated up and down the rivers of England. Since a barge drawn by horse could carry a far greater load than a cart pulled by the same horse, water transportation was much cheaper than land transportation.

P1

Yet water transportation had a major drawback. There was only one way to take goods across the stretches of land that lay between rivers. Workers had to unload the boats, put the goods into wagons, drive the wagons to the next river, and move the cargo again onto boats.

P2

To solve this problem, the British built a network of canals. (A canal is a human-made waterway.) In the late 1700's and early 1800's, British workers built more than 4,000 miles of inland waterways. The new canals slashed the cost of transportation. Now coal and other raw materials could be carried by water to more places in Britain.

British roads also improved. John Macadam, a Scottish engineer, was largely responsible for the better roads. Working in the early 1800's, he built roadbeds with a layer of large stones for drainage. Over that bed, he put a carefully smoothed layer of crushed rock. Roads with the "macadam" surface were not nearly so muddy or dusty as the old ones. Heavy wagons could travel over them even in rainy weather without sinking to their axles in mud.

P3

The Railway Age began.

The biggest change in transportation came with the use of steam power. Just as the steam engine itself was a key breakthrough in the late 1700's, the steam engine on wheels gave a tremendous boost to English industry after 1820. This invention is better known, of course, as the railroad locomotive. The railroad revolutionized transportation first in England and later in many parts of the world.

The idea of running wagons on iron tracks was not new. For centuries, horses had pulled carts of iron and coal along railway tracks in and around mines. Before 1800, however, no one succeeded in using steam power to run such a cart. These vehicles needed smaller, more powerful engines than the ones that Watt was producing for factory use.

P4

In 1804, an English engineer named Richard Trevithick made an engine that was both small and powerful. In fact, it ran at such high pressures that Watt and others expected it to blow up. Trevithick claimed his engine could pull a cart along a set of rails. A mine owner in Wales bet Trevithick the equivalent of several thousand dollars that such a feat was impossible. Trevithick won the bet by running his locomotive over ten miles of track, hauling ten tons of iron as well. "The public until now called me a scheming fellow," wrote Trevithick at the time, "but now their tone is much altered."

Other British engineers soon built improved versions of Trevithick's locomotive. By 1820, several hundred such vehicles were in operation in and around British mines. One of these early railroad engineers was George Stephenson, who gained a solid reputation by building some 20 engines for mine operators in northern England.

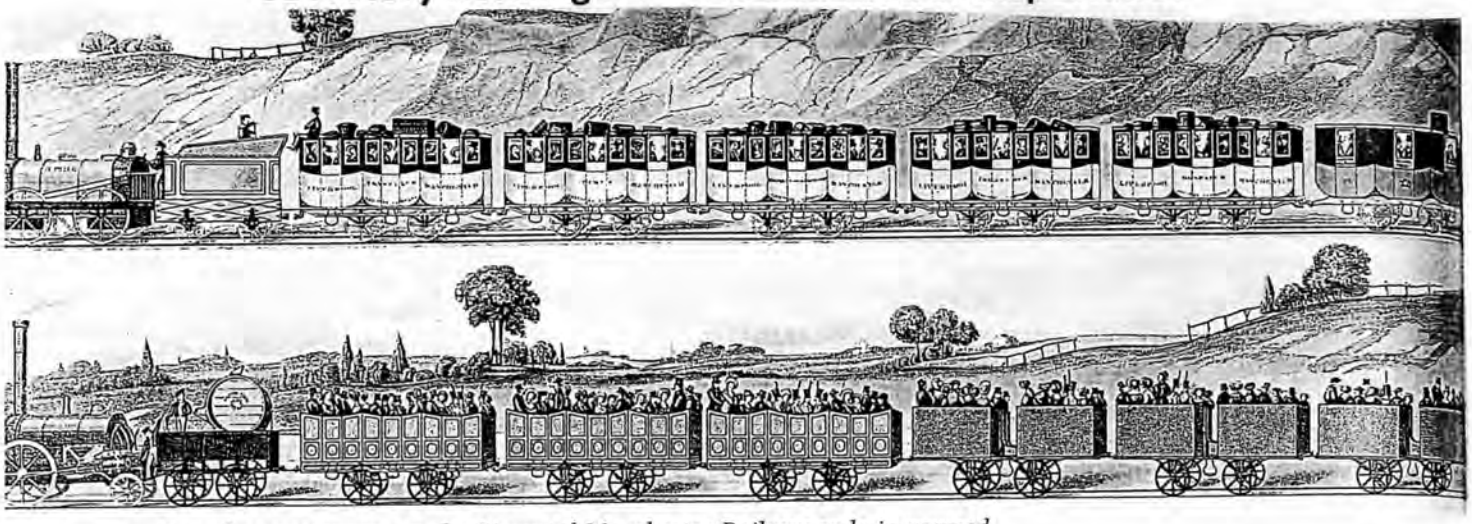
In 1821, Stephenson began work on the world's first railroad line. It was to run 27 miles from the Yorkshire coalfields to the port of Stockton on the North Sea. In 1825, the railroad opened, using four locomotives that Stephenson had designed and built.

P5

News of this success quickly spread throughout Britain. The entrepreneurs of northern England were especially interested. They wanted a railroad line to connect the port of Liverpool on the northwestern coast of England with the inland city of Manchester, the heart of the spinning and weaving industry. The track was laid, and in 1829, trials were held to choose the best locomotive for use on the new line.

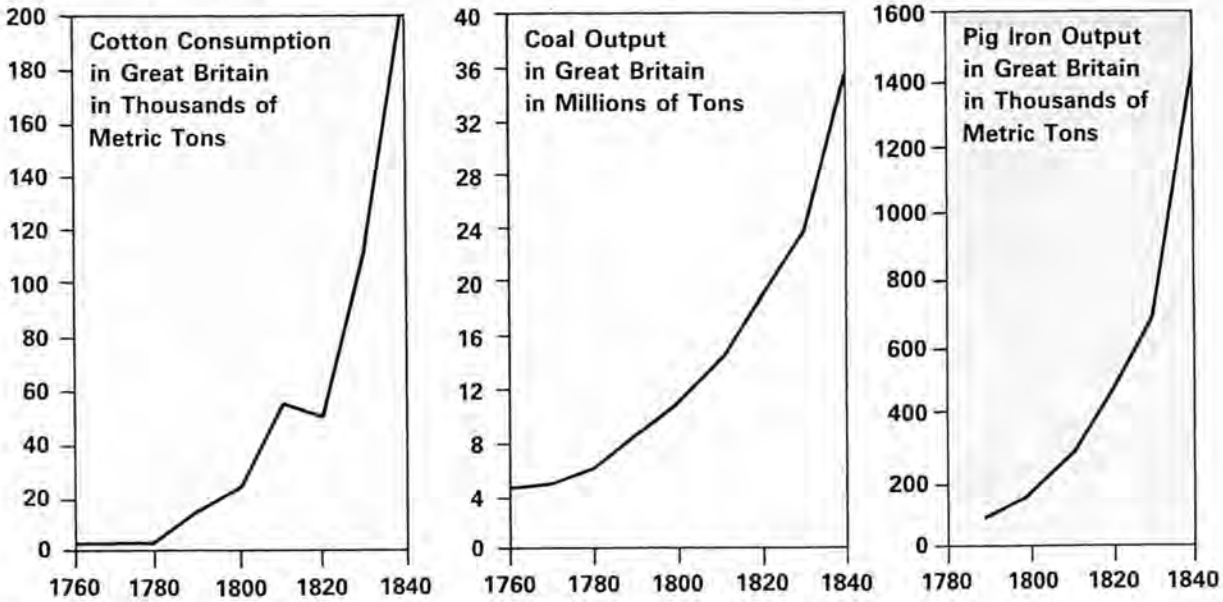
P6

3L History Reading 71 – Revolution in Transportation



First-class passengers on the Liverpool-Manchester Railway rode in covered carriages (top). Second- and third-class passengers rode in open cars.

The Industrial Revolution in Cotton, Coal, and Pig Iron



In what 20-year period did the use of cotton first show an increase? About how much pig iron did Britain produce in 1800? In 1820?

KEY DATES

1838	Brunel builds the steamship *Great Western*
1842	James Nasmyth invents first steam hammer
1865	George Pullman invents railroad sleeping car
1869	George Westinghouse invents air brake; Suez Canal completed, easing travel to India
1886	Samuel Gompers sets up American Federation of Labor
1893	Frank Sprague invents electric trolley
1900	United States and Germany both overtake Britain's steel production

3L History Reading 71 – Revolution in Transportation

P6

Five engines entered the competition, but none could compare with the Rocket, designed by Stephenson and his son. With smoke pouring from its tall smokestack and its two pistons pumping to and fro as they drove the front wheels, the Rocket hauled a 13-ton load at an unheard-of speed—more than 24 miles per hour!

Railroads spread across England.

P7

The Liverpool-Manchester Railway opened officially in 1830. It was an immediate success. Thousands of passengers traveled between the two cities every day on a dozen separate trains. Freight trains soon carried more goods back and forth along this route than canals and road coaches combined.

Confident that there were great profits to be made in railroads, British business people began building new lines all over the country. Hundreds of different railroads opened during the 1830's and 1840's. Soon such lines linked nearly all the major cities and towns of Britain. In 1850, only 25 years after the first line had been built, Great Britain had 16,200 miles of railroad track.

Perhaps the only business people who did not welcome the Railroad Age were the owners of canals and freight wagon lines. The "iron horse" soon drove many of them out of business.

Not everything went smoothly on these early railroads, of course. Breakdowns, accidents, and delays were frequent. At first, most passengers traveled in open cars where they were exposed to rain, wind, and the black clouds of soot that poured from the engine smokestack. Despite such drawbacks, however, railroads offered faster and more reliable transportation than anything known in earlier times.

Railroads had far-reaching effects.

P8

No other industrial development had a greater effect on life in Great Britain than the railroads. In fact, the invention and perfection of the locomotive had at least four major effects.

First, railroads encouraged further industrial growth by giving manufacturers a fast, cheap way to transport both raw materials and finished products. Moreover, entrepreneurs could now build factories in many more locations. They no longer needed to be close to supplies of raw materials. Trains could deliver such supplies wherever there were tracks.

Second, the railroad boom provided millions of new jobs. Thousands of people did the back-breaking work of leveling hills, laying track, digging tunnels, and building bridges. Railroads used so much coal and iron that they boosted the demand for workers in those two industries as well. One mile of railroad track, for example, required 300 tons of iron.

Third, railroads gave a further boost to progress in agriculture. Now farmers could send milk and fruit to market in distant cities. In the same way, trains opened new markets for the fishing industry. Fresh fish could now be sold daily even in cities far from the sea.

Last but not least, railroads had enormous influence on the attitudes that ordinary people had about travel. Until this time, most people had thought of travel as something one did only when it was absolutely necessary. By offering quick and reasonably cheap transportation, railroads completely changed this view. Country people, for example, were now more willing to take jobs in distant cities, because they knew they could make regular visits home. At the same time, railroads began to open up a new world of travel for enjoyment. The spread of the railroads through Britain led directly to the growth of such popular seaside resorts as Brighton (south of London) and Blackpool (on the northwestern coast).

P8

Footnote to History

In 1745, it took two weeks to travel from London to Edinburgh, a distance of 330 miles. By 1796, better roads cut the traveling time to two and a half days. In 1830, a passenger on a coach could make the trip in 36 hours.

Goldstein, Phyllis, ed. *World History: Perspectives on the Past*. Lexington: D.C. Heath and Company, 1988. Print.

LATIN READING AND INSTRUCTIONS

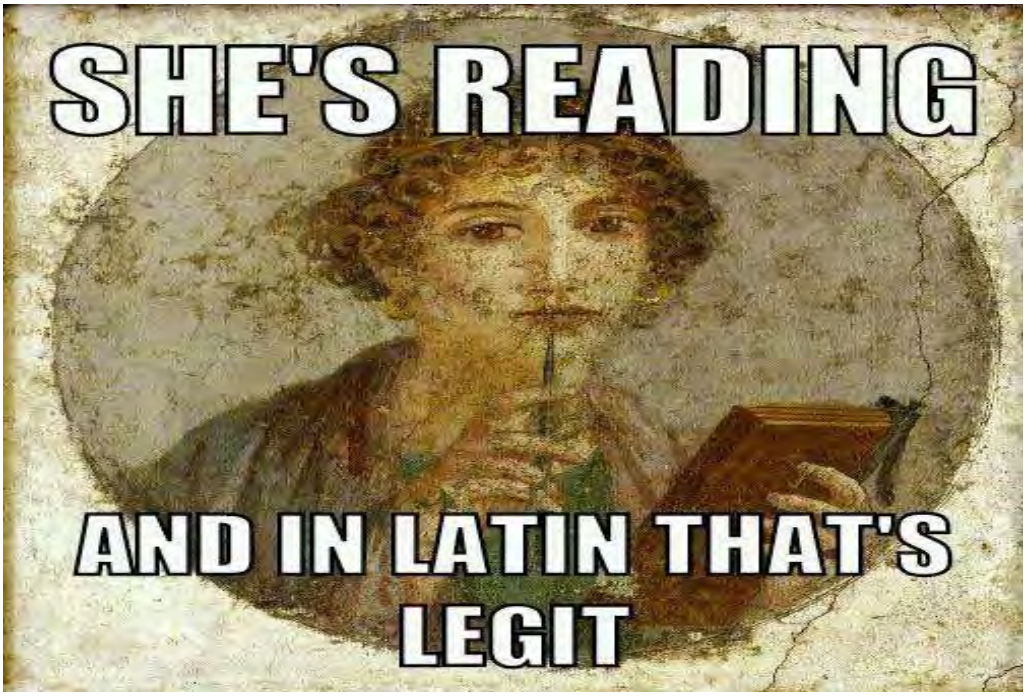
3L Latin Distance Learning

─ Week of May 15-21 ─

Directions:

- Carefully read Ch. 29 Grammar Notes Part I, where we learn the *IMPERFECT subjunctive* for all verbs, plus the *PRESENT* and *IMPERFECT subjunctive* for the verb "*sum*".
- On the page labelled "Latin Exercises", write your name and class (hour) in the top right, and complete parts A and B. In part B, #1-5 are required; 6-10 are ***optional/ enrichment!***

As always, ***please*** reach out to me with any questions you have (including the "enrichment" work)!



←WHO SAYS LATIN CAN'T BE PUNNY?

Chapter 29 Grammar Notes Part I
Imperfect Subjunctive; Pres. and Impf. Sbjn. of *sum* and *possum*

<u>How to form the imperfect subjunctive</u> (for ALL conjugations of verbs *<u>including irregulars</u>*!):

1) take the **infinitive** (2nd principal part): laudāre, monēre, etc.
2) add active or passive personal endings: laudāre**m** laudāre**r**

   laudārē**s** laudārē**ris**

   etc. etc.

That's it! No new endings or anything. Just combining two things *you already know* to use in a slightly different way! Let's do an **example** before we look at how to *translate* the imperfect subjunctive.

<u>Example:</u> Suppose you want the verb *amō, amāre, amāvī, amatum* in the imperfect subjunctive, and you want it to be the **3rd person singular** (he/she/it form), and active.

- Looking at the two steps above, you first go to the *2nd principal part* -- ***amāre***
- Next, we said you want the 3rd person singular *active* form. That means we go through our chant of our regular personal endings for **active** and **passive**:

ACTIVE			**Passive**		
Person	*Singular*	*Plural*	*Person*	*Singular*	*Plural*
1st	**-m (-o)**	**-mus**	1st	**-r**	**-mur**
2nd	**-s**	**-tis**	2nd	**-ris**	**-mini**
3rd	**-t**	**-nt**	3rd	**-tur**	**-ntur**

- So, looking at the chart, we go to *3rd person*, then *singular* in the *active* half, and we add the two pieces together
- ***Amāre*** + **t** = **<u>amāret</u>**
- For the **imperfect subjunctive,** it's as simple as that ☺

<u>Next let's quickly look at how to *translate* imperfect subjunctives:</u>
depends on the type of clause that it is used in, however, "***were***", "***would***", "***might***" are often used.

hoc dīxit (dīcēbat) **ut** eōs **iuvāret**.

She said this (in order) to help them.

OR: *She said this so that she **<u>might</u>** help them.*

hoc fēcit (faciēbat) **nē** urbs **caperētur**.

*He did this so that the city **<u>might</u>** not be captured.*

<u>Finally, let's look at how to form the present and imperfect subjunctive of *sum* and *possum*.</u>

- Quick review: remember that the irregular verb ***sum, esse, fui, futurum*** means "I am", and ***possum, posse, potui*** means "I am able"
- As you learned back in 1L, the *present indicative* conjugations for ***sum*** and ***possum*** are:

SUM			**POSSUM**		
Person	*Singular*	*Plural*	*Person*	*Singular*	*Plural*
1st	**sum**	**sumus**	1st	**possum**	**possumus**
2nd	**es**	**estis**	2nd	**potes**	**potestis**
3rd	**est**	**sunt**	3rd	**potest**	**possunt**

- As you will see below, in the *subjunctive*, the present tense of these verbs is irregular and must be memorized; the imperfect tense, however, follows the <u>exact same rule</u> as every other verb in the imperfect subjunctive, which we learned above!

sum, esse, fuī, futūrus		**possum, posse, potuī**	
Present Sbjn.	**Imperfect Sbjn.**	**Present Sbjn.**	**Imperfect Sbjn.**
Sím	*Essem*	*Possím*	*Possem*
Sís	*Esses*	*Possís*	*Posses*
Sít	*Esset*	*Possít*	*Posset*
Símus	*Essemus*	*Possímus*	*Possemus*
Sítis	*Essetis*	*Possítis*	*Possetis*
sínt	*essent*	*possínt*	*possent*

SPANISH READING AND INSTRUCTIONS

(3L) Sra. Serrano (A) Week 7: May 15th - 21st

Gramática

Instructions

The imperfect tense: regular verbs

Another way to talk about the past is with the imperfect tense. Use the imperfect tense to talk about actions that happened repeatedly in the past.

Rafael patinaba y Mónica corría.
Rafael used to skate and Monica used to run.

¿Recuerdas?
You have already learned to talk about completed actions in the past using the preterite tense.
- Ayer Rafael patinó y Mónica corrió en el parque.

Here are the regular forms of *-ar, -er,* and *-ir* verbs in the imperfect tense. Notice the accent mark on the *nosotros* form of *jugar*:

I used to play... To Play

(yo)	jugaba	(nosotros) (nosotras)	jugábamos
(tú)	jugabas	(vosotros) (vosotras)	jugabais
Ud. (él) (ella)	jugaba	Uds. (ellos) (ellas)	jugaban

Note that *-er* and *-ir* verbs, such as *hacer* and *vivir*, have the same endings:

To live (To do) We used to do...

(yo)	hacía vivía	(nosotros) (nosotras)	hacíamos vivíamos
(tú)	hacías vivías	(vosotros) (vosotras)	hacíais vivíais
Ud. (él) (ella)	hacía vivía	Uds. (ellos) (ellas)	hacían vivían

- **As you know, in Spanish you can often omit the subject of a verb because the subject is made clear in the verb ending:**

(Yo) Vivo en Chicago. (The subject, *yo*, is included in the verb ending.)

However, since the *yo* and *Ud./él/ella* forms are the same in the imperfect for *-ar, -er,* and *-ir* verbs, speakers often use the subject pronouns to avoid confusion.

Patricia tenía un triciclo rojo pero yo tenía uno azul. same ending but different subjects.

- **Expressions such as *generalmente, por lo general, a menudo, muchas veces, de vez en cuando, todos los días,* and *nunca* can cue you to use the imperfect because they imply that something happened repeatedly in the past.**

The imperfect tense: irregular verbs

There are only three irregular verbs in the imperfect tense: *ir, ser,* and *ver.* Here are all the forms:

ir = To go

(yo)	iba	(nosotros) (nosotras)	íbamos
(tú)	ibas	(vosotros) (vosotras)	ibais
Ud. (él) (ella)	iba	Uds. (ellos) (ellas)	iban

I used to go...

ser = To be

(yo)	era	(nosotros) (nosotras)	éramos
(tú)	eras	(vosotros) (vosotras)	erais
Ud. (él) (ella)	era	Uds. (ellos) (ellas)	eran

I used to be...

- Notice the accent mark on the *nosotros* form for the verbs *ir* and *ser.*

ver = To see

(yo)	veía	(nosotros) (nosotras)	veíamos
(tú)	veías	(vosotros) (vosotras)	veíais
Ud. (él) (ella)	veía	Uds. (ellos) (ellas)	veían

I used to see...

SCIENCE READING

Section 2

Human Genetic Disorders

Reading Preview

Key Concepts

- What are two major causes of genetic disorders in humans?
- How do geneticists trace the inheritance of traits?
- How are genetic disorders diagnosed and treated?

Key Terms

- genetic disorder
- pedigree
- karyotype

Target Reading Skill

Comparing and Contrasting

As you read, compare and contrast the types of genetic disorders by completing a table like the one below.

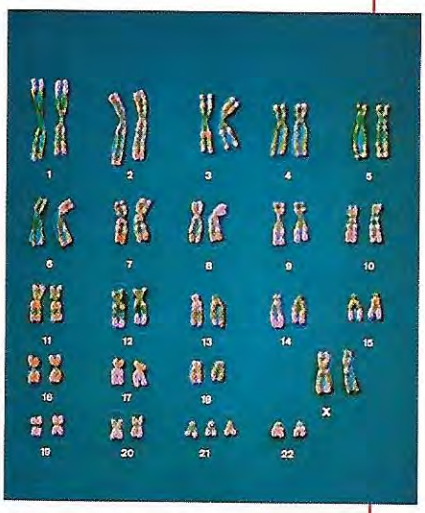
Disorder	Description	Cause
Cystic fibrosis	Abnormally thick mucus	Loss of three DNA bases

Lab zone Discover Activity

How Many Chromosomes?

The photo at right shows the chromosomes from a cell of a person with Down syndrome, a genetic disorder. The chromosomes have been sorted into pairs.

1. Count the number of chromosomes in the photo.
2. How does the number of chromosomes compare to the usual number of chromosomes in human cells?



Think It Over

Inferring How do you think a cell could have ended up with this number of chromosomes? (*Hint:* Think about the events that occur during meiosis.)

The air inside the stadium was hot and still. The crowd cheered loudly as the runners approached the starting blocks. At the crack of the starter's gun, the runners leaped into motion and sprinted down the track. Seconds later, the race was over. The runners, bursting with pride, hugged each other and their coaches. These athletes were running in the Special Olympics, a competition for people with disabilities. Many of the athletes who compete in the Special Olympics have disabilities that result from genetic disorders.

◀ Runners in the Special Olympics

FIGURE 9
Sickle-Cell Disease
Normally, red blood cells are shaped like round disks (top). In a person with sickle-cell disease, red blood cells can become sickle-shaped (bottom).

Lab zone Skills Activity

Predicting

A man has sickle-cell disease. His wife does not have the disease, but is heterozygous for the sickle-cell trait. Predict the probability that their child will have sickle-cell disease. (*Hint:* Construct a Punnett square.)

Causes of Genetic Disorders

A **genetic disorder** is an abnormal condition that a person inherits through genes or chromosomes. **Some genetic disorders are caused by mutations in the DNA of genes. Other disorders are caused by changes in the overall structure or number of chromosomes.** In this section, you will learn about some common genetic disorders.

Cystic Fibrosis Cystic fibrosis is a genetic disorder in which the body produces abnormally thick mucus in the lungs and intestines. The thick mucus fills the lungs, making it hard for the affected person to breathe. Cystic fibrosis is caused by a recessive allele on one chromosome. The recessive allele is the result of a mutation in which three bases are removed from a DNA molecule.

Sickle-Cell Disease Sickle-cell disease affects hemoglobin, a protein in red blood cells that carries oxygen. When oxygen concentrations are low, the red blood cells of people with the disease have an unusual sickle shape. Sickle-shaped red blood cells clog blood vessels and cannot carry as much oxygen as normal cells. The allele for the sickle-cell trait is codominant with the normal allele. A person with two sickle-cell alleles will have the disease. A person with one sickle-cell allele will produce both normal hemoglobin and abnormal hemoglobin. This person usually will not have symptoms of the disease.

Hemophilia Hemophilia is a genetic disorder in which a person's blood clots very slowly or not at all. People with the disorder do not produce one of the proteins needed for normal blood clotting. The danger of internal bleeding from small bumps and bruises is very high. Hemophilia is caused by a recessive allele on the X chromosome. Because hemophilia is a sex-linked disorder, it occurs more frequently in males than in females.

Down Syndrome In Down syndrome, a person's cells have an extra copy of chromosome 21. In other words, instead of a pair of chromosomes, a person with Down syndrome has three of that chromosome. Down syndrome most often occurs when chromosomes fail to separate properly during meiosis. People with Down syndrome have some degree of mental retardation. Heart defects are also common, but can be treated.

Reading Checkpoint **How is the DNA in the sickle-cell allele different from the normal allele?**

Pedigrees

Imagine that you are a geneticist who is interested in tracing the occurrence of a genetic disorder through several generations of a family. What would you do? **One important tool that geneticists use to trace the inheritance of traits in humans is a pedigree.** A **pedigree** is a chart or "family tree" that tracks which members of a family have a particular trait.

The trait in a pedigree can be an ordinary trait, such as a widow's peak, or a genetic disorder, such as cystic fibrosis. Figure 10 shows a pedigree for albinism, a condition in which a person's skin, hair, and eyes lack normal coloring.

Go Online active art

For: Pedigree activity
Visit: PHSchool.com
Web Code: cep-3042

FIGURE 10

A Pedigree

The father in the photograph has albinism. The pedigree shows the inheritance of the allele for albinism in three generations of a family. **Interpreting Diagrams** *Where is an albino male shown in the pedigree?*

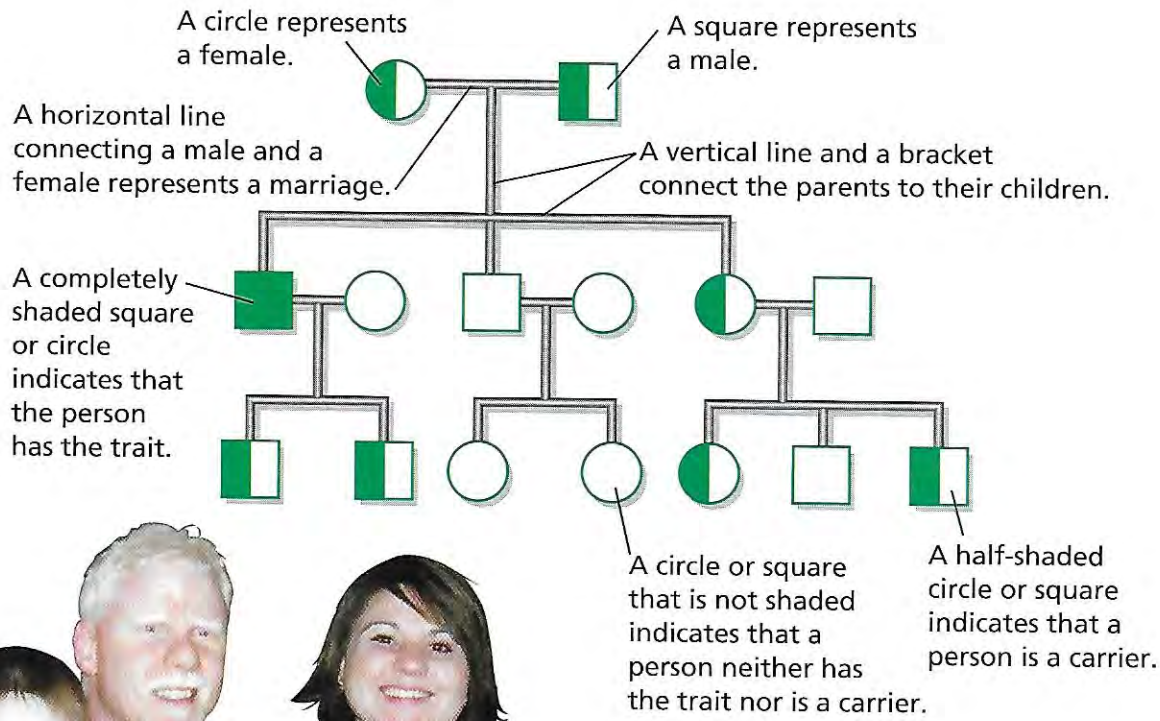
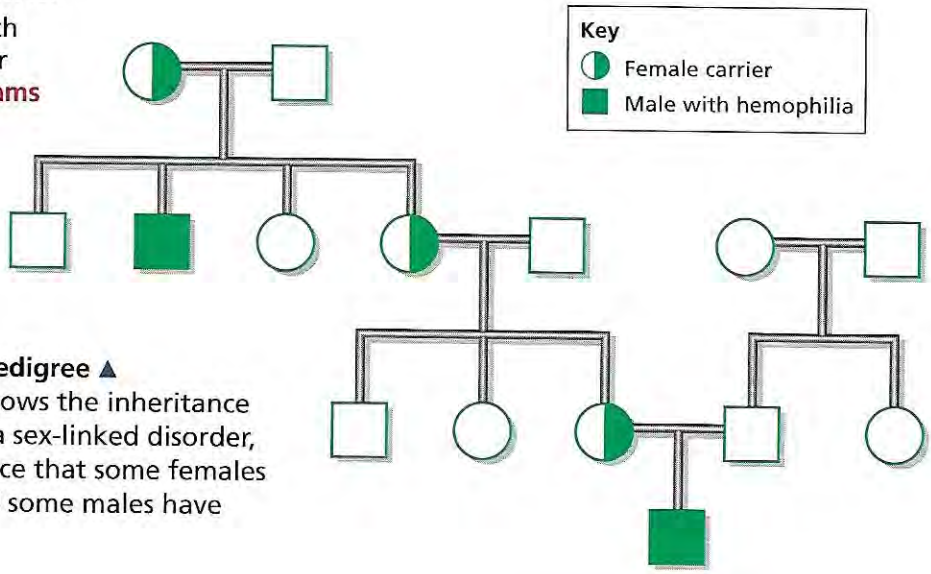


FIGURE 11

Living With Hemophilia

With proper care, people with hemophilia can manage their disorder. **Interpreting Diagrams** *In the pedigree, how many people have hemophilia?*



A Hemophilia Pedigree ▲
The pedigree shows the inheritance of hemophilia, a sex-linked disorder, in a family. Notice that some females are carriers, and some males have the disorder.

Managing Genetic Disorders

Years ago, doctors had only Punnett squares and pedigrees to help them predict whether a child might have a genetic disorder. **Today, doctors use tools such as karyotypes to help diagnose genetic disorders. People with genetic disorders are helped through medical care, education, job training, and other methods.**

Karyotypes To detect chromosomal disorders such as Down syndrome, a doctor examines the chromosomes from a person's cells. The doctor uses a karyotype to examine the chromosomes. A **karyotype** (KA ree uh typ) is a picture of all the chromosomes in a cell. The chromosomes in a karyotype are arranged in pairs. A karyotype can reveal whether a person has the correct number of chromosomes in his or her cells. If you did the Discover activity, you saw a karyotype from a girl with Down syndrome.

Genetic Counseling A couple that has a family history of a genetic disorder may turn to a genetic counselor for advice. Genetic counselors help couples understand their chances of having a child with a particular genetic disorder. Genetic counselors use tools such as karyotypes, pedigree charts, and Punnett squares to help them in their work.

Reading Checkpoint What do genetic counselors do?

Physical Therapy ► Trained medical workers help hemophilia patients cope with their disorder. Here, a boy receives physical therapy.

Sports ► A boy with hemophilia learns how to play golf. The disorder does not stop people from living active lives.

Dealing With Genetic Disorders People with genetic disorders face serious challenges, but help is available. Medical treatments help people with some disorders. For example, physical therapy helps remove mucus from the lungs of people with cystic fibrosis. People with sickle-cell disease take folic acid, a vitamin, to help their bodies manufacture red blood cells. Because of education and job training, adults with Down syndrome can find work in hotels, banks, restaurants, and other places of employment. Fortunately, most genetic disorders do not prevent people from living active, productive lives.

Section 2 Assessment

Target Reading Skill

Comparing and Contrasting Use the information in your table to help you answer Question 1 below.

Reviewing Key Concepts

1. a. **Identifying** Identify the two major causes of genetic disorders in humans.
   b. **Explaining** Which of those two major causes is responsible for Down syndrome?
   c. **Describing** How are the cells of a person with Down syndrome different from those of a person without the disorder?
2. a. **Defining** What is a pedigree?
   b. **Inferring** Why are pedigrees helpful in understanding genetic disorders?
   c. **Applying Concepts** Sam has hemophilia. Sam's brother, mother, and father do not have hemophilia. Draw a pedigree showing who has the disorder and who is a carrier.
3. a. **Reviewing** What is a karyotype?
   b. **Inferring** Would a karyotype reveal the presence of sickle-cell disease? Why or why not?

Writing in Science

Creating a Web Site Create an imaginary Web site to inform the public about genetic disorders. Write a description of one disorder for the Web site.

Section 3

Tech & Design

Advances in Genetics

Reading Preview

Key Concepts

- What are three ways of producing organisms with desired traits?
- What is the goal of the Human Genome Project?

Key Terms

- selective breeding
- inbreeding • hybridization
- clone • genetic engineering
- gene therapy • genome

Target Reading Skill

Asking Questions Before you read, preview the red headings. In a graphic organizer like the one below, ask a question for each heading. As you read, write answers to your questions.

Advances in Genetics

Question	Answer
What is selective breeding?	Selective breeding is . . .

Lab zone Discover Activity

What Do Fingerprints Reveal?

1. Label a sheet of paper with your name. Then roll one of your fingers from side to side on an ink pad. Make a fingerprint by carefully rolling your inked finger on the paper.
2. Divide into groups. Each group should choose one member to use the same finger to make a second fingerprint on a sheet of paper. Leave the paper unlabeled.
3. Exchange your group's fingerprints with those from another group. Compare each labeled fingerprint with the fingerprint on the unlabeled paper. Decide whose fingerprint it is.
4. Wash your hands after completing this activity.

Think It Over

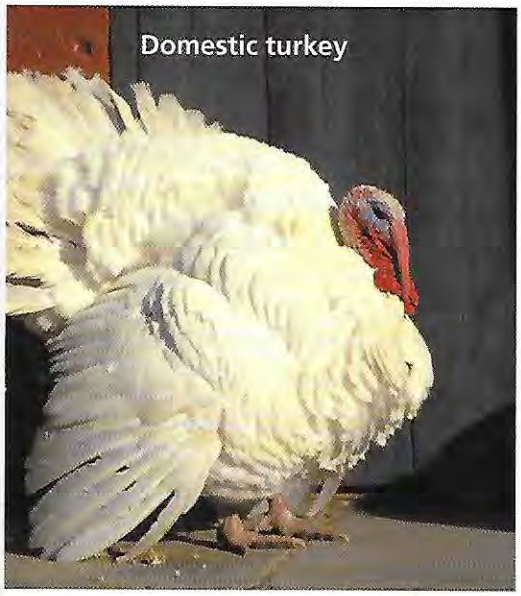
Observing Why are fingerprints used to identify people?

Would you like to have your picture taken with a 9,000-year-old family member? Adrian Targett, a history teacher in the village of Cheddar in England, has actually done that. All that's left of his ancient relative, known as "Cheddar Man," is a skeleton. The skeleton was discovered in a cave near the village. DNA analysis indicates that Targett and Cheddar Man are relatives.

Like your fingerprints, your DNA is different from everyone else's. Because of advances in genetics, DNA evidence can show many things, such as family relationships.

FIGURE 12
Distant Relatives
Adrian Targett visits his distant relative, Cheddar Man. Unfortunately, Cheddar Man cannot respond to questions about life 9,000 years ago.

FIGURE 13
Inbreeding
Turkeys such as the one with white feathers were developed by inbreeding. Breeders started with wild turkeys.



Selective Breeding

Genetic techniques have enabled people to produce organisms with desirable traits. **Selective breeding, cloning, and genetic engineering are three methods for developing organisms with desirable traits.**

The process of selecting organisms with desired traits to be parents of the next generation is called **selective breeding**. Thousands of years ago, in what is now Mexico, the food that we call corn was developed in this way. Every year, farmers saved seeds from the healthiest plants that produced the best food. In the spring, they planted those seeds. By repeating this process over and over, farmers developed plants that produced better corn. People have used selective breeding with many different plants and animals. Two selective breeding techniques are inbreeding and hybridization.

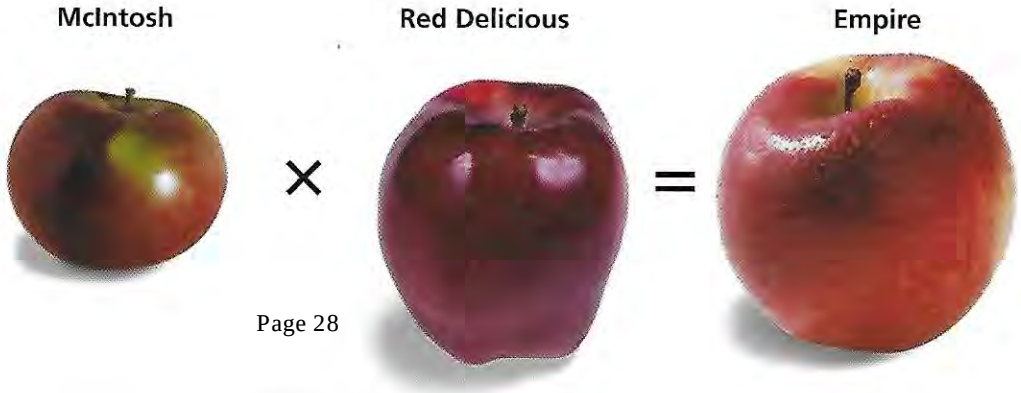
Inbreeding The technique of **inbreeding** involves crossing two individuals that have similar characteristics. For example, suppose a male and a female turkey are both plump and grow quickly. Their offspring will probably also have those desirable qualities. Inbred organisms have alleles that are very similar to those of their parents.

Inbred organisms are genetically very similar. Therefore, inbreeding increases the probability that organisms may inherit alleles that lead to genetic disorders. For example, inherited hip problems are common in many breeds of dogs.

Hybridization In **hybridization** (hy brid ih ZAY shun), breeders cross two genetically different individuals. The hybrid organism that results is bred to have the best traits from both parents. For example, a farmer might cross corn that produces many kernels with corn that is resistant to disease. The result might be a hybrid corn plant with both of the desired traits.

Reading Checkpoint **What is the goal of hybridization?**

FIGURE 14
Hybridization
McIntosh and Red Delicious apples were crossed to produce Empire apples.
Applying Concepts *What desirable traits might breeders have been trying to produce?*



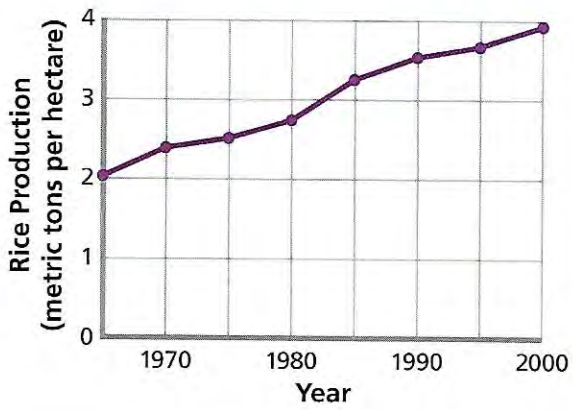
Math Analyzing Data

Changing Rice Production

The graph shows how worldwide rice production changed between 1965 and 2000. New, hybrid varieties of rice plants are one factor that has affected the amount of rice produced.

1. **Reading Graphs** According to the graph, how did rice production change between 1965 and 2000?
2. **Reading Graphs** How many metric tons of rice per hectare were produced in 1965? How many were produced in 2000?
3. **Calculating** Calculate the approximate difference between rice production in 1965 and 2000.

Worldwide Rice Production



4. **Developing Hypotheses** What factors besides new varieties of plants might help account for the difference in rice production between 1965 and 2000?

Cloning

For some organisms, a technique called cloning can be used to produce offspring with desired traits. A **clone** is an organism that has exactly the same genes as the organism from which it was produced. It isn't hard to clone some kinds of plants, such as an African violet. Just cut a stem from one plant, and put the stem in soil. Water it, and soon you will have a whole new plant. The new plant is genetically identical to the plant from which the stem was cut.

Researchers have also cloned animals such as sheep and pigs. The methods for cloning these animals are complex. They involve taking the nucleus of an animal's body cell and using that nucleus to produce a new animal.

Reading Checkpoint How can a clone of a plant be produced?

Discovery Channel School

Modern Genetics

Video Preview
▶ Video Field Trip
Video Assessment

FIGURE 15
Cloned Goats
These goats were produced by cloning.

Genetic Engineering

Geneticists have developed another powerful technique for producing organisms with desired traits. In this process, called **genetic engineering**, genes from one organism are transferred into the DNA of another organism. Genetic engineering can produce medicines and improve food crops.

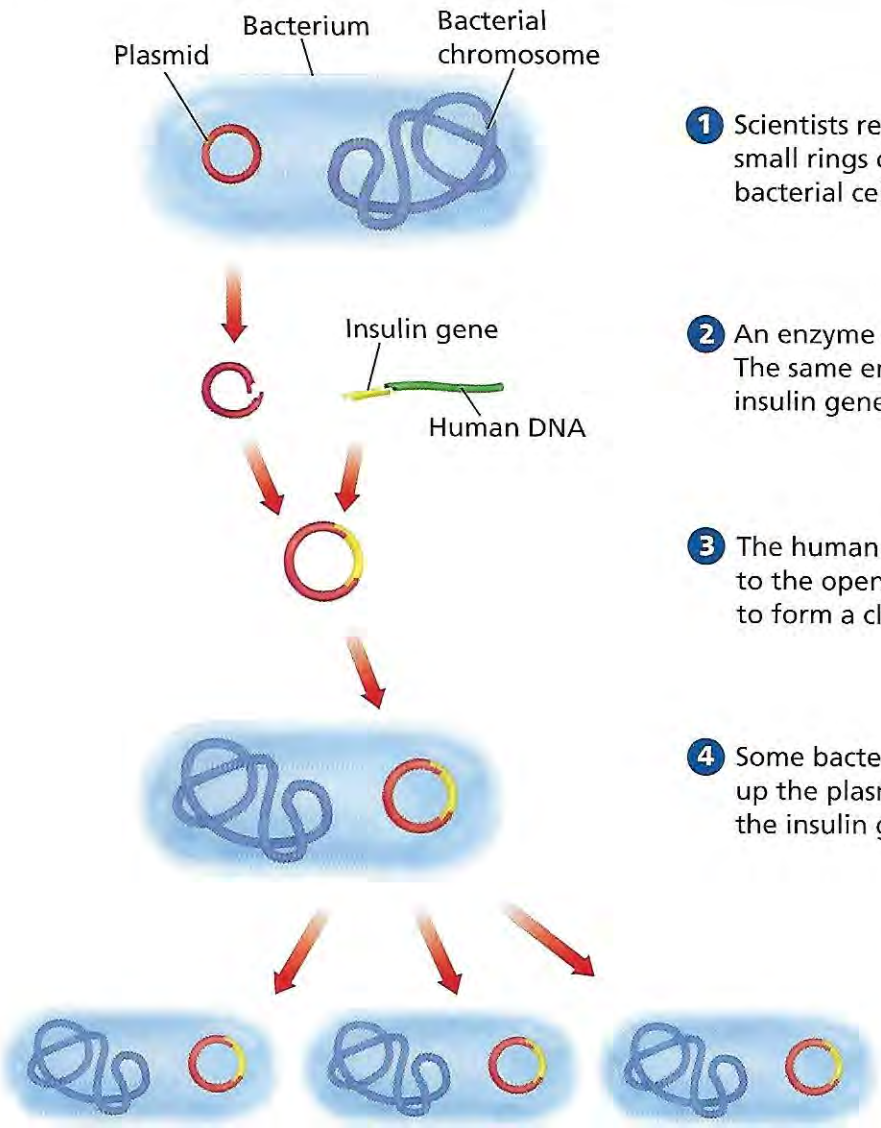
Genetic Engineering in Bacteria One type of genetically engineered bacteria produces a protein called insulin. Injections of insulin are needed by many people with diabetes. Recall that bacteria have a single DNA molecule in the cytoplasm. Some bacterial cells also contain small circular pieces of DNA called plasmids. In Figure 16, you can see how scientists insert the DNA for a human gene into the plasmid of a bacterium.

FIGURE 16

Genetic Engineering

Scientists use genetic engineering to create bacterial cells that produce important human proteins such as insulin.

Interpreting Diagrams *How does a human insulin gene become part of a plasmid?*



1. Scientists remove plasmids, small rings of DNA, from bacterial cells.
2. An enzyme cuts open the plasmid DNA. The same enzyme removes the human insulin gene from its chromosome.
3. The human insulin gene attaches to the open ends of the plasmid to form a closed ring.
4. Some bacterial cells take up the plasmids that have the insulin gene.
5. When the cells reproduce, the new cells will contain copies of the "engineered" plasmid. The foreign gene directs the cell to produce human insulin.

FIGURE 17
Genetically Engineered Fish
The bright red zebra danios are the result of genetic engineering.

Once the gene is inserted into the plasmid, the bacterial cell and all its offspring will contain this human gene. As a result, the bacteria produce the protein that the human gene codes for—in this case, insulin. Because bacteria reproduce quickly, large amounts of insulin can be produced in a short time.

Genetic Engineering in Other Organisms Scientists can also use genetic engineering techniques to insert genes into animals. For example, human genes can be inserted into the cells of cows. The cows then produce the human protein for which the gene codes in their milk. Scientists have used this technique to produce the blood clotting protein needed by people with hemophilia.

Genes have also been inserted into the cells of plants, such as tomatoes and rice. Some of the genes enable the plants to survive in cold temperatures or in poor soil. Other genetically engineered crops can resist insect pests.

Gene Therapy Someday it may be possible to use genetic engineering to correct some genetic disorders in humans. This process, called **gene therapy**, will involve inserting copies of a gene directly into a person's cells. For example, doctors may be able to treat hemophilia by replacing the defective allele on the X chromosome. The person's blood would then clot normally.

Concerns About Genetic Engineering Some people are concerned about the long-term effects of genetic engineering. For example, some people think that genetically engineered crops may not be entirely safe. People fear that these crops may harm the environment or cause health problems in humans. To address such concerns, scientists are trying to learn more about the effects of genetic engineering.

Reading Checkpoint **How do genetic engineering techniques enable scientists to produce clotting proteins?**

Go Online SCI LINKS NSTA
For: Links on genetic engineering
Visit: www.SciLinks.org
Web Code: scn-0343

Lab zone Skills Activity

Communicating
Suppose you work for a drug company that uses genetically engineered bacteria to produce insulin. Write an advertisement for the drug that includes a simplified explanation of how the drug is produced.

Learning About Human Genetics

Recent advances have enabled scientists to learn a great deal about human genetics. The Human Genome Project and DNA fingerprinting are two applications of this new knowledge.

The Human Genome Project Imagine trying to crack a code that is 6 billion letters long. That's exactly what the scientists working on the Human Genome Project did. A **genome** is all the DNA in one cell of an organism. **The main goal of the Human Genome Project was to identify the DNA sequence of every gene in the human genome.** In May 2006, the last chromosome in the human genome, chromosome 1, was sequenced. Scientists estimate that human DNA has between 20,000 and 25,000 genes. Analysis of the human genome, such as determining the exact location and function of each gene, could take several decades to complete.

DNA Fingerprinting DNA technology used in the Human Genome Project can also identify people and show whether people are related. DNA from a person's cells is broken down into small pieces, or fragments. Selected fragments are used to produce a pattern called a DNA fingerprint. Except for identical twins, no two people have exactly the same DNA fingerprint. You will learn more about DNA fingerprinting in Technology and Society.

Reading Checkpoint About how many genes are in the human genome?

FIGURE 18
The Human Genome Project
Scientists on the Human Genome Project continue to study human DNA.

Section 3 Assessment

Target Reading Skill **Asking Questions** Work with a partner to check your answers in your graphic organizer.

Reviewing Key Concepts

1. a. **Listing** List three methods that scientists can use to develop organisms with desirable traits.
   b. **Describing** Briefly describe each method.
   c. **Applying Concepts** Lupita has a houseplant. Which method would be the best way of producing a similar plant for a friend? Explain your answer.
2. a. **Defining** What is a genome?
   b. **Explaining** What is the Human Genome Project?
   c. **Relating Cause and Effect** How might knowledge gained from the Human Genome Project be used in gene therapy?

Lab zone At-Home Activity

Food and Selective Breeding Go to a grocery store with a parent or other family member. Discuss how fruits and vegetables have been produced by selective breeding. Choose a fruit or vegetable, and identify the traits that make it valuable.

LOGIC READING

LESSON 25 What Were the Causes of the Civil War?

As was shown in Lesson 24, historians do not agree on the main cause of the Civil War. This lesson presents summaries of the views of four historians. Read them and answer the questions that follow.

Historian A (1913)

(1) There is a risk in arguing that any historic event was due to a single cause. Nevertheless, for the Civil War, it may safely be argued that there was a single cause, slavery. If the Negro had never been brought to America, our Civil War could not have occurred.

(2) Differences over the tariff were not an important cause of the war. In 1832, South Carolina nullified the tariff acts passed in 1828 and 1832. No other state joined in the nullification, and the issue was settled peacefully. The American Union could not be broken by a tariff dispute.

(3) At the time of the Constitution in 1789, the North and South were not very different. A number of Southerners felt slavery was wrong and should be abolished gradually. Then the cotton gin was invented which made slavery profitable. Southern opinion changed. Slavery was seen as a great religious and moral blessing.

(4) In 1831, William Lloyd Garrison began his crusade against slavery. In *The Liberator*, he preached that slavery was wrong. Though his active followers were never many, he got people thinking that slavery was wrong. In the nineteen years before 1850, antislavery sentiment in the North constantly increased.

(5) Part of the Compromise of 1850 was the Fugitive Slave Act. The law presumed that a black was a runaway slave until he could prove otherwise, which ran counter to the American legal belief in innocence until proven guilty. Further, the commissioner who would decide the matter received $10 if he decided the Negro was a runaway slave and only $5 if he held the Negro to be a freeman. Many Northerners were outraged by these provisions of the Fugitive Slave Act.

(6) The controversy over the morality of slavery rose to a new level with the 1852 publication of *Uncle Tom's Cabin.* The novel sold a million and a half copies in England and the United States, and it was performed as a play in London and Paris. The election of Lincoln in 1860 was a great factor in the destruction of slavery, and, in gaining votes for Lincoln, *Uncle Tom's Cabin* was an important cause of the war.

(7) The North was further inflamed by the Kansas-Nebraska Act of 1854, which voided the Missouri Compromise and allowed for the expansion of slavery into the territories. Senator Chase, an opponent of the bill, said, "They [Southerners] celebrate a present victory but the echoes they awake will never rest until slavery itself shall die." The Kansas-Nebraska Act roused antislavery feeling in the country, and led to the formation of

[continued on next page]

Historian A

[continued from previous page]

the Republican Party: a party to unite Whigs, antislavery Democrats, and Free-Soilers in their resistance to slave power.

(8) Then in the Dred Scott Case, the Supreme Court decided that slaves could be taken anywhere in the territories. Parties and leaders split over the slavery issue. In 1858, Senator William H. Seward declared that there existed "an irrepressible [inevitable] conflict" between slavery and freedom.

(9) Towards the end of 1859, John Brown led his violent attack on slavery by capturing the United States arsenal at Harper's Ferry, Virginia.

The attempt, of course, failed. Brown and four of his followers were taken prisoner. He had a fair trial and was hanged forty-five days later. Southerners believed that Brown had "whetted knives of butchery for their mothers, sisters, daughters, and babes." To many Northerners he became a martyr. Northern soldiers were inspired by the stirring music and words:

"John Brown's body lies a-moldering in the grave, but his soul goes marching on."

(10) The final break came in the election of 1860. Republican Abraham Lincoln won by carrying all the free states except New Jersey, while he did not receive a single vote in ten out of the eleven states that later seceded and made up the Southern Confederecy. The day after the election, the legislature of South Carolina called a convention. Leaders argued in speeches that the North had made an attack on slavery, their sacred institution. They concluded that the only way they could preserve their liberty and property was by separation from the Union. The Civil War began soon after.

Historian B (1927)

(1) The economic systems of the North and South were very different in the decades before the Civil War. Had the economic systems of the two regions remained unchanged or changed slowly, the balance of power might have been maintained indefinitely and the Civil War avoided. But the American economy did not remain static. The economic changes increased the tension between North and South, which brought on the war.

(2) As the industrial North expanded in production and area, businessmen demanded a high tariff to protect against foreign competition as well as government financial help (especially in building transportation) for manufacturing and trade expansion. Southerners, meanwhile, with their plantation economy, were opposed to the higher prices the tariff would bring and did not want to pay higher taxes to help manufacturers in the North.

(3) Under these circumstances, the South viewed the Whigs and later the Republicans as parties set up to enrich the North at the financial expense of the South. Reuben Davis of Mississippi complained in 1860,

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Historian B

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"There is not a pursuit [business] in which man is engaged (agriculture excepted) which is not demanding legislative aid to enable it to enlarge its profits, and all at the expense of the primary pursuit of men—agriculture. Those interests, having a common purpose of plunder, have united and combined to use the government as the instrument of their operation... Now this combined host of interests stands arrayed against the agricultural states..."

(4) The agitation in the North against slavery provided Southerners with further proof of a Northern conspiracy against the agricultural South. Northerners in the Free-Soil Party didn't want to free slaves everywhere, just prevent slavery from spreading to the territories.

(5) Senator Jefferson Davis charged Northern Senators with using slavery as an excuse: "What do you propose, gentlemen of the Free-Soil Party?... You say you are opposed to the expansion of slavery...Is the slave benefited by it? Not at all. It is not humanity that influences you.....It is that you may have an opportunity of cheating us that you want to limit slave territory within circumscribed bounds. It is that you may have a majority in the Congress of the United States and convert the Government into an engine of northern aggrandizement [enrichment]....You desire to weaken the political power of the Southern states; and why? Because you want, by an unjust system of legislation, to promote the industry of the New England states, at the expense of the people of the South and their industry."

(6) Republicans, like Free-Soilers also opposed only the expansion of slavery. Abraham Lincoln said emphatically that the Republicans didn't intend to interfere with slavery in the states. The only political party to propose abolition of slavery was the Liberty Party, which received only 2.5% of the vote in the 1844 election. This shows that the moral issue of slavery was not an important cause of the Civil War.

(7) The slave owners fought to get control of the government against the growing population of the North. In Northern eyes, the slave owners were able to check Northern power by gaining control of the Democratic Party and the government in the 1850s, the decade before the Civil War. William H. Seward of New York claimed the slaveholders controlled the key committees in the Senate, and he saw no great champion of freedom in the House. He accused the President of being "a confessed apologist of the slave-property class," and noted that the Supreme Court consisted of a majority of justices from the South.

(8) Democratic control of the government after 1852 was confirmed in a series of events which indicated an indefinite expansion of slavery into the territories and a withdrawal of government support from industrial and commercial enterprise. First Congress repealed the Missouri Compromise, throwing open the Louisiana Purchase to slavery. Then in the "Ostend Manifesto," proslavery leaders declared the United States would be justified to take Cuba (a

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Historian B

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plantation economy) from Spain by force. In the Dred Scott Case of 1857, Southern Chief Justice Taney declared that Congress had no power to prohibit slavery in the territories at any time.

(9) On economic matters, in 1859, Congress stopped the last of government subsidies for steamship companies. In 1857, the tariff was reduced. Immediately, an industrial panic (a depression) burst upon the country. Many Northerners blamed the economic distress on the low tariff pushed through by Southern Democrats.

(10) But Southern control of the national government could not last. Steadily the capitalist North increased in numbers and strength compared to the South. Finally, in 1860, the Republican Abraham Lincoln was elected President. Northern businessmen and industrialists would get what they wanted: federal grants to build a transcontinental railroad, high tariffs, government help for banking and other businesses. To Southern leaders the choice was clear—stay in the Union and be plundered by the North, or secede (withdraw) from the Union.

(11) With secession came the irrepressible conflict in 1861—the Civil War. By it the capitalists, laborers, and farmers of the North and West drove the Southern plantation owners from power in the national government. The Civil War was really the second American Revolution, an economic revolution by which the capitalists gained dominance over the slave owners and pushed industrialization forward.

Historian C (1929-1940)

(1) Some people have idealized the Civil War, One writer called it "the last romantic war." But historians must deal with reality. The numbers of killed and wounded in the Civil War are staggering. The surgeon general reported 315,555 soldier graves of which 145,000 were unidentified graves.[1] To the soldiers who contracted pneumonia, malaria, typhus, and other diseases, the war could hardly have looked romantic. In fact, the very word "war" does not really capture the realism of it. A better term would be "organized murder" or "human slaughterhouse."

(2) The generation of the 1850s blundered into the ghastly, indecisive slaughter. There was no sufficient cause for the Civil War—not slavery, not economics, not cultural differences, nothing. It was a repressible conflict—a needless war.

(3) Slavery certainly did not cause the war. Slavery had reached the limit of its geographic growth by 1860. The northern line of Arkansas was the northern limit of slavery, and the Mississippi River, except for Texas, was the western limit. Anyone who examines the matter objectively realizes that slavery would never really spread to Kansas or Nebraska.[2] The census of 1860 showed two slaves in Kansas and fifteen in Nebraska. Likewise, in the Mexican Cession (New Mexico, Utah, Nevada,

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Historian C

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Colorado, Arizona, and California) slavery was blocked by soil, climate, and cheap native labor. California became a free state, and the 1860 Census did not list a single slave in New Mexico, Colorado, or Nevada.

(4) The issue about slave and free states was dead by 1860, but people couldn't see it. There was still opportunity for politicians to play on people's prejudice and fear. In terms of slave states in the West, the North fought for what it could get without fighting, and the South fought for what it could never get.

(5) Even in the South itself, slavery was dying by 1860. There was a great increase in cotton production, especially after 1858, which forced the price of cotton down. Prices of slaves would have had to drop then; since slaves would have been less valuable as cotton became less profitable. Cotton lands did actually become unprofitable after the Civil War, which shows that slave prices really would have dropped after 1861. Southerners would have economic incentive to get rid of their now costly labor force. They may have switched to a seasonal, free labor force. In any event, they surely would not have fought to the death to save slavery.

(6) The other traditional explanations for the Civil War also fail the test of careful examination. Economic diversity between the industrializing North and plantion South offered as much motive for union as for secession. Northern textile mills needed Southern cotton and Southern plantations needed Northern manufactured goods. The sectional tariff was an issue, but it's always a sectional issue, and there haven't been wars over it at other times, so why would it have caused war only in 1861?

(7) No explanation is sufficient for the Civil War without considering bogus leadership, poor judgement, emotional unreason, misunderstanding, misrepresentation of the other side, fanaticism. Several examples illustrate how illogical people were in blundering into war. Southerner Robert Toombs said he would resist Stephen A. Douglas though he could see "nothing but... defeat in the future."[3] He was choosing war though he knew the South would lose. Henry Watterson, an antislavery unionist, fought for the Confederacy because he was from Tennessee, which was certainly an emotional rather than a rational decision. Some people had an unrealistic view of war. Ralph Waldo Emerson said, "War is a realist, shatters everything flimsy and shifty, sets aside all false issues... breaks through all that is not real."[4]

(8) With such unrealistic, emotional views, the country blundered into a needless war in 1861. Historians then went back searching for causes, assuming there were sufficient causes for war. If the dispute with England over Oregon in the 1840s had ended in war, historians would have gone back searching for differences leading to war, neglecting friendly factors. When crises pass without wars, people go back to normal, recognizing how artificial and unimportant the issues had been that were inflamed by the small minority of agitators and unscrupulous politicians. Such was the case with the Civil War.

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Endnotes for Historian C

1. Joseph K Barnes, ed. *The Medical and Surgical History of the War of the Rebellion* (Washington, second issue, 1875), Pt. 1, Vol. I, Intro p. xxxiii.
2. It is clear that Senator Stephen A. Douglas believed that neither Nebraska nor Kansas would ever become a slave state. See quotations from his speeches in Albert J. Beveridge, *Abraham Lincoln*, 1809-1858 (Boston, 1928), pp. 108, 193.
3. Ulrich B. Phillips, ed. "The Correspondence of Robert Toombs, Alexander H. Stephens, and Howell Cobbs" in *American Historical Association, Annual Report*, 1911 (Washington, 1913), II. p. 469.
4. Edward W. Emerson and Waldo E. Forbes, eds., *Journals of Ralph Waldo Emerson* (Boston, 1909), IX, p. 461.

Historian D (1949)

(1) Revisionist historians (one of them Historian C) have suggested that the Civil War was not inevitable, but rather that it was the result of a blundering generation which let emotions interfere with peacefully solving the problems of the 1850s. These historians assert that slavery was not the cause of war. They argue that the slavery problem could have been solved without war. It would be fruitful, therefore, to examine whether slavery could have been abolished without war.

(2) Reform of slavery by Southerners was not possible. Southern slaveholders united in defense of slavery in response to abolitionist challenges and would not even consider ending it in any way. Revisionists cannot say that there should not have been abolitionists, because abolitionism was an inevitable result of slavery. It is like saying there should have been no anti-Nazis in the 1930s. Besides, no part of the South made substantial progress toward ending slavery even before abolitionism began. It is extremely unlikely that Southerners would ever have voluntarily done away with slavery.

(3) Revisionists say that the Southern economy based on slavery was declining in the 1850s and would have died without the Civil War. This view is based on the assumption that slaveholders would have recognized the cause of their problem and moved to abolish slavery in response. However, this is not what Southerners had done up to the Civil War. They had always blamed hard times on Northern exploitations, not on their system. Southerners were not ready to give up their slave system.

(4) So the slave system was not to be given up lightly by the slaveholders. And the slave system was evil. Moreover, in acting to eliminate criticism of its peculiar institution (slavery), the South outlawed what a believer in democracy can only regard as the basic values of man—free speech and dissent.

(5) A society bent on defending its evil institutions thus creates moral differences far too profound to be solved by compromise. Such a society forces upon everyone, both those living at the time and those historians writing about it later, the necessity for a moral judgment or action.

(6) Because the revisionist historians felt no moral urgency to end slavery, theycalledtheabolitionists"fanatics."

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Historian D

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But the "fanatics" had good moral reasons for opposing slavery. It was the moral issue of slavery, for example, that gave significance to the debate over slavery in the territories and over the enforcement of the fugitive slave laws. The evidence shows that these issues, by themselves, were not the basic issues. But they were the available issues; and they became charged with the moral significance of the central issue of slavery.

(7) In light of the expansion of Naziism and its wanton attacks on innocent countries in the past decade, are we to conclude, as the revisionists do, that man can solve peaceably all the problems which overwhelm him? Will we be condemned someday by historians as another blundering generation? Should we have tried at all costs to settle our disagreements with Hitler peacefully?

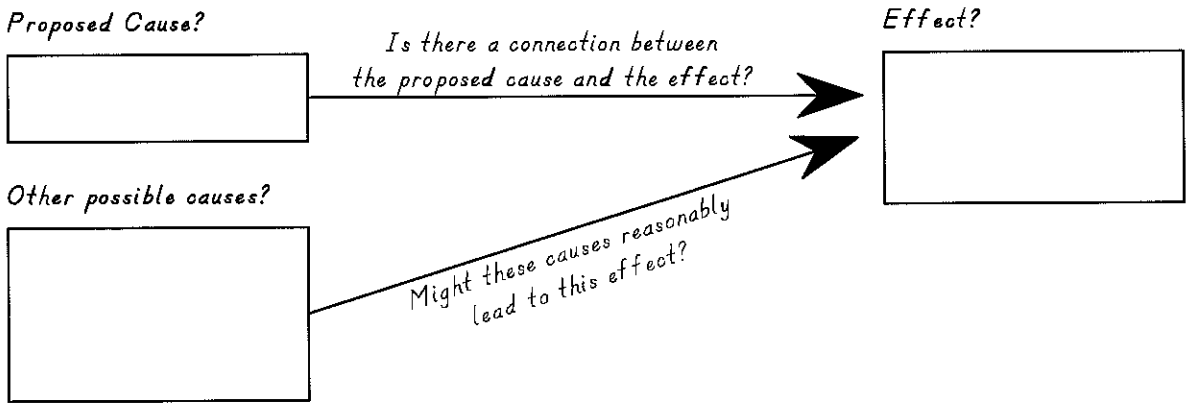
(8) We delude ourselves when we think that history teaches us that evil will be "outmoded" by progress and that politics consequently does not impose on us the necessity for moral decision and for struggle.

Worksheet for Lesson 25

Q Historian A

1. What is the main point of Historian A's interpretation?

2. How strong is Historian A's cause-and-effect reasoning?



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3. Evaluate one generalization that Historian A makes.

4. Evaluate one piece of evidence Historian A uses.

5. Overall, how strong is the evidence in this argument?

6. How strong is Historian A's interpretation? Why do you think so?

Q Historian B

7. What is the main point of Historian B's interpretation?

8. How strong is Historian B's cause-and-effect reasoning?

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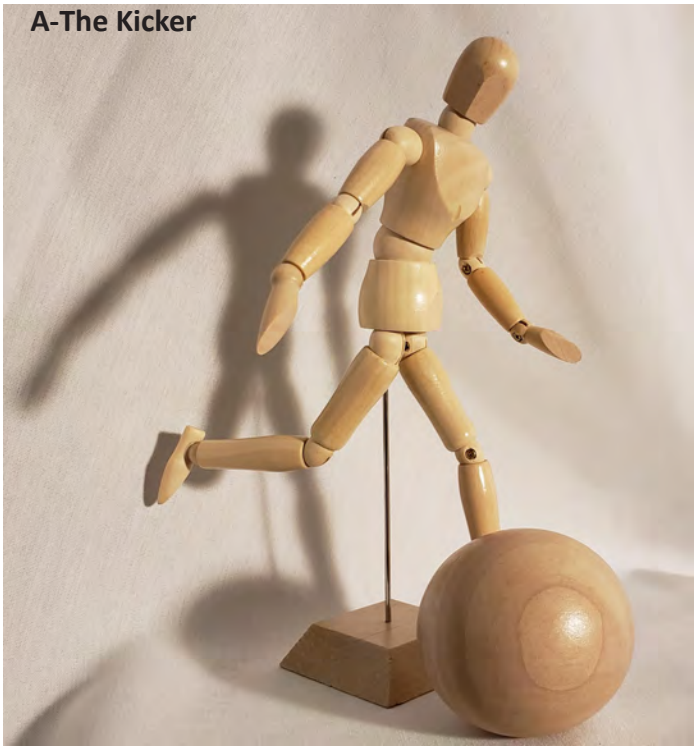
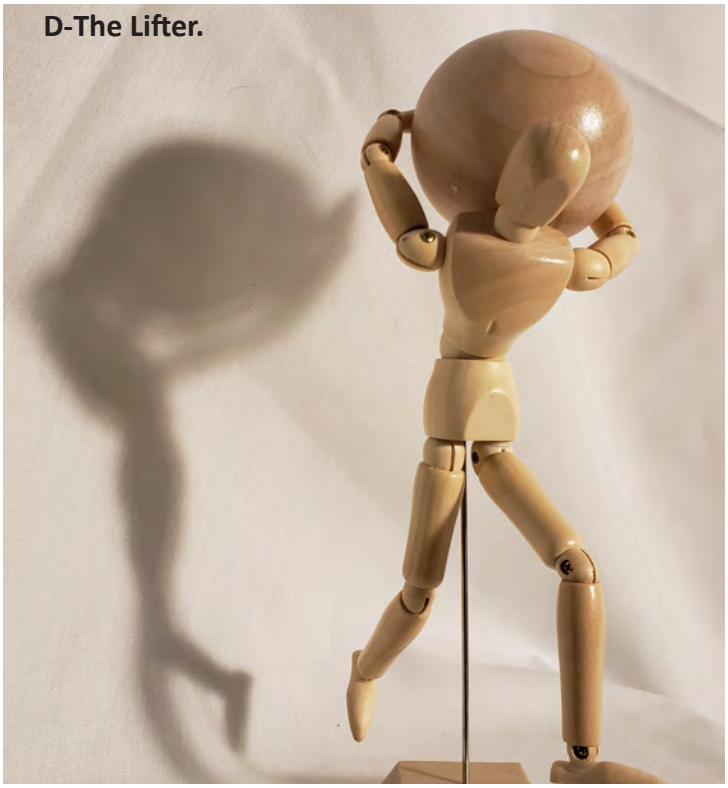
ART INSTRUCTIONS

Read me:

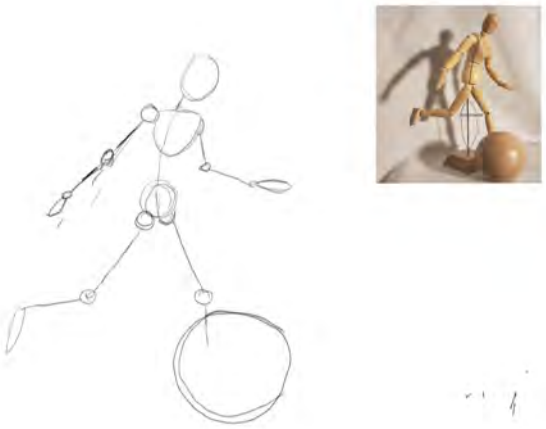
Over the last few weeks we have practiced how to draw the human form in proportion. First, I had you lay out the bones of a proportional stick skeleton, then add thickness or muscle to that skeleton, and eventually turn it into a person or a mannequin. This week I want you to expand on what you have learned and draw the human form in a pose or a gesture. Below there are four gesture drawing options. Pick one to draw and follow the steps to make your own gesture drawing. (Remember, all art assignments have a video to go with them and you can find them in the distance learning section of the parnassusteachers.com website with password Pegasus.)





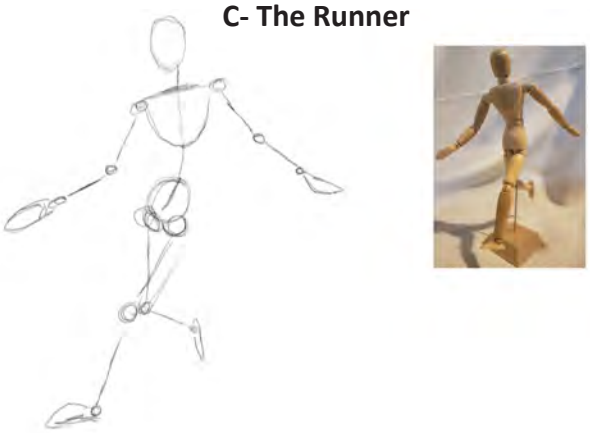
Step 1: The first step, just like the previous assignments, is to break the image into simple shapes. Since we are are drawing the human form, sketch out the "Stick Skeleton" first. Remember to draw lightly in the first steps since we will erase some of this later. Also, don't forget to draw circles for your joints like I have done in the examples below.

A-The Kicker

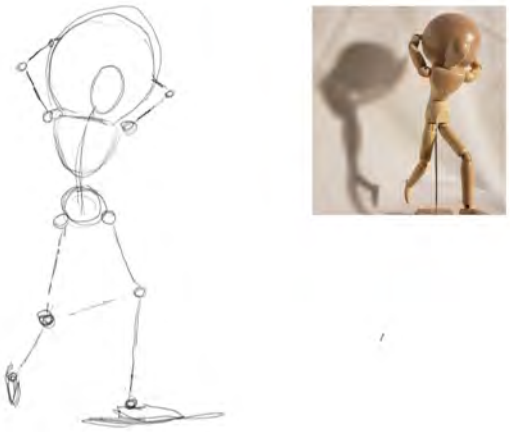


B- The Conqueror

C- The Runner

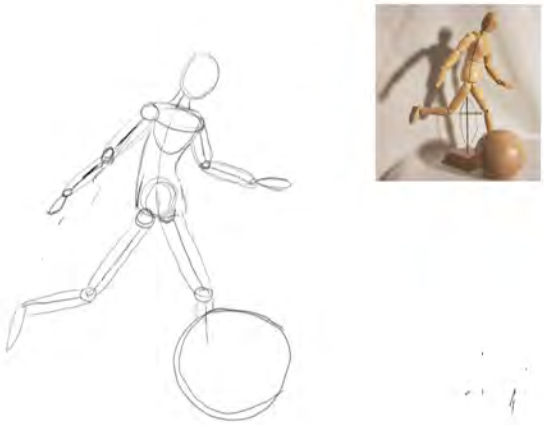


D-The Lifter.



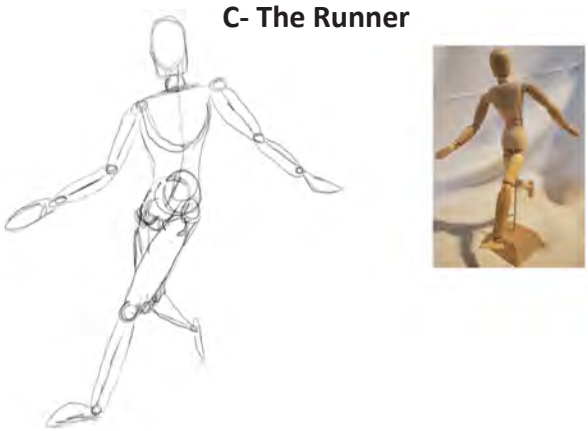
Step 2 : Now that you have your lightly drawn stick skeleton you can start to add thickness or muscle to the body. Start by drawing thin oval shapes from the circle joints of each shoulder. Draw the same oval shape from the shoulder joint circle to the elbow joint circle, and so on. Continue this until you have outlined your skeleton, like I have done below. Don't forget, we are still drawing lightly in this step, as these shapes will serve as a guide as you continue with your drawing. Once you have the muscles drawn, it is time to erase the stick skeleton and start adding your details. Move on to Step 3a or Step 3b.

A-The Kicker

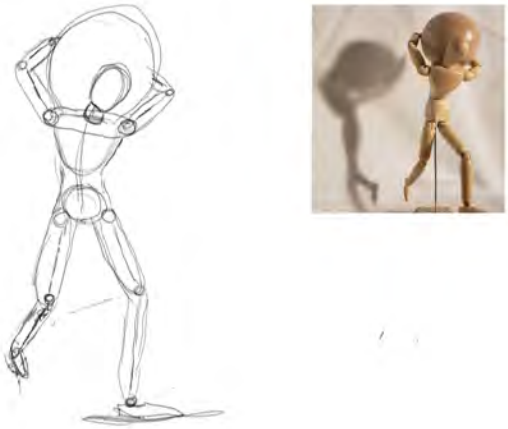


B- The Conqueror

C- The Runner



D-The Lifter.



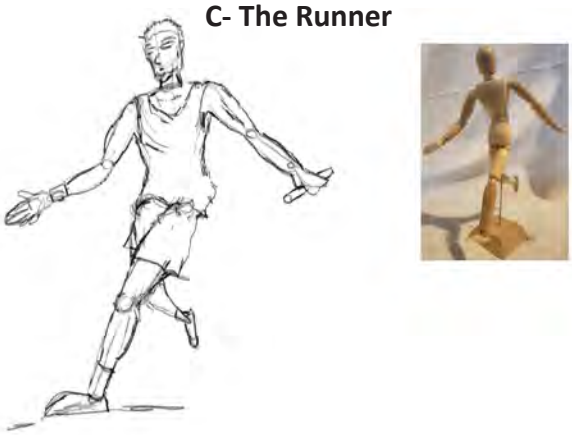
Step 3a: If you are not drawing a sentient being continue to Step 3b.

If you are not drawing a sentient being continue to Step 3b. In this step you will draw in your character's face using the face map method and add whatever details you would like. This is your chance to really get creative! You can draw your character as a Spartan Warrior, a Viking, a Greek/Roman God, anyone from history, or even yourself! Once you are done adding the defining details to your character, erase any muscle lines that do not need to be seen anymore.

A-The Kicker

B- The Conqueror

C- The Runner

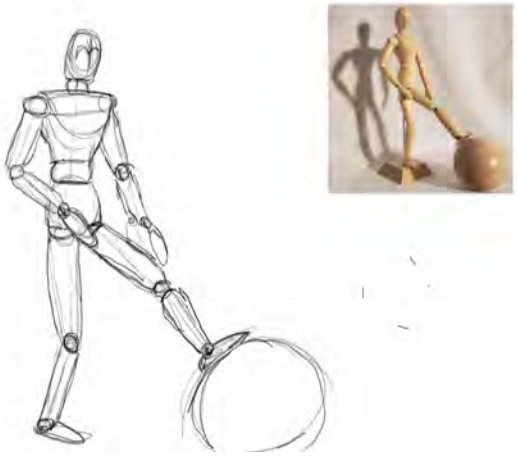


D-The Lifter.

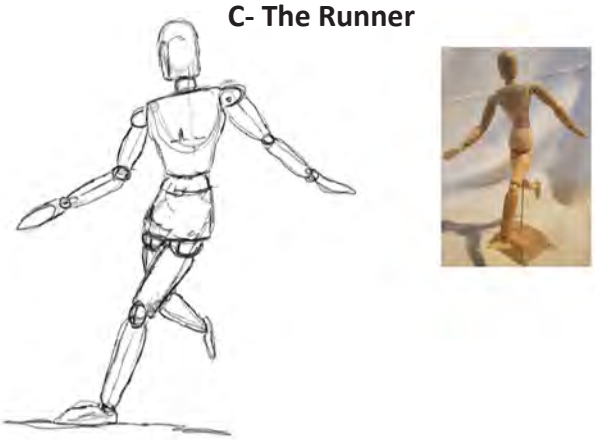
Step 3b: In this step you will draw in the remaining parts of the mannequin image you have selected. Once you are done adding the defining details to your mannequin erase any lines that do not need to be seen anymore. Make sure to add in any shadows you may see in the drawing, after that you are done.

A-The Kicker

B- The Conqueror

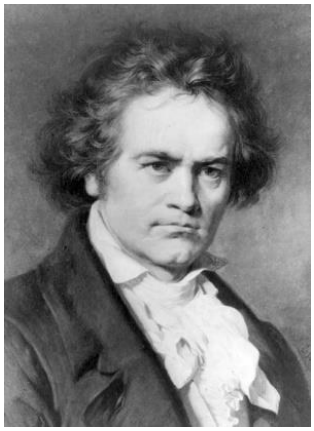


C- The Runner



D-The Lifter.

Music Reading and Enrichment Activities



Beethoven's Musical Revolution

Last week we discussed three composers of the Classical era (1750-1828). Of these, Ludwig van Beethoven (1770-1827) had the greatest influence on how later composers, performers, and audiences thought about music's power to express profound feelings and ideas.

For Beethoven, music was more than just beautiful, well-ordered sounds. His own compositions often trace a dramatic and turbulent journey from struggle and self-doubt to restored confidence and triumphant affirmation of life.

Beethoven's personal struggle was very real. In the 1790s, he became very depressed about his increasing deafness. His loss of hearing worsened to the point that he had to give up playing the piano in public, and he became more and more isolated from society. His late music became very difficult for audiences to understand, but he was still considered the greatest composer of his time. By continuing to compose music, Beethoven was able to overcome his pessimistic feelings and keep going. The path from depression to renewed hope and optimism is an important idea in Beethoven's life and music.

Beethoven was also greatly invested in the social and political messages of the French Revolution, particularly its struggle toward social equality and freedom for all people. These revolutionary ideas were threatening the existing social order in Beethoven's home of Vienna, where the emperor used spies and censors to suppress them. Part of Beethoven's success was due to his use of instrumental music to convey these ideas. His music was not banned because there were no words in it to "prove" that he was encouraging resistance to oppression or demanding bold changes to society.

French Revolution slogan: "Liberty, Equality, Fraternity, or Death"

Especially in his nine symphonies, Beethoven "translates" his personal journey and revolutionary beliefs into a universal message of perseverance and unity among people. While there are moments of incredible beauty in his music, Beethoven's expanded musical vocabulary allows him to also express resistance, discontent, and almost violent aggression. The epic scale of Beethoven's musical journeys are matched by this wide range of expression.

Listen to the beginning of Beethoven's Fifth Symphony. The opening rhythm (short-short-short-long) has a defiant quality that has been described as Beethoven shaking his clenched fist at the world. This same music would become a symbol of international resistance to Naxism during World War II. Now listen to the opening of the fourth, final movement of Beethoven's Fifth, and you will hear the complete change of mood: this is a jubilant brass fanfare, and is widely considered to be a musical message that triumph over hardships is possible. But these are just two key moments in the journey – listen to the whole symphony to hear how this transformation takes place.

Listening: Beethoven Symphony No. 5. https://www.youtube.com/watch?v=agtMrVRr34s

In the last movement of his Ninth Symphony, the "Choral Symphony," Beethoven does use a text, from Schiller's "Ode to Joy," to reinforce the idea of moving toward the equal status and participation of all people. Opening with clashing sounds and confused fragments of other melodies, the very simple Ode to Joy melody shows us the possibility of "more joyous sounds." Again Beethoven follows a path of transformation and development in this movement, mirroring how we as human beings can improve ourselves through education and meaningful experiences. In 1989, the European Union chose the "Ode to Joy" as its musical hymn.

The "Ode to Joy" also expresses a hope for improved relations among people through tolerance and compassion. This vision of real and lasting "justice for all" resonated with the distinguished American Civil Rights leader, Martin Luther King, Jr. King even refers to the words of the "Ode to Joy" in his famous "I Have a Dream" speech of 1963.

From the “Ode to Joy” (by Friedrich Schiller and Ludwig van Beethoven):

Oh friends, not these tones!
Rather let us sing more
Cheerful and more joyful ones.
Joy! Joy!
Your sweet magic frees all others…
All men on earth become brothers.

From the “I Have a Dream” speech by Martin Luther King, Jr., August 28, 1963:

We will be able to transform the jangling discords of our nation into a beautiful symphony of brotherhood.

Listening: Beethoven Ninth Symphony (Ode to Joy movement starts at 52:14; Ode to Joy melody first heard at 55:26; vocal section starts at 59:22).
https://www.youtube.com/watch?v=rOjHhS5MtvA

For Further Exploration

More on Beethoven’s life and music:
https://www.gramophone.co.uk/composers/ludwig-van-beethoven-33808

Can you listen without being able to hear? This famous musician says you can:
https://www.ted.com/talks/evelyn_glennie_how_to_truly_listen