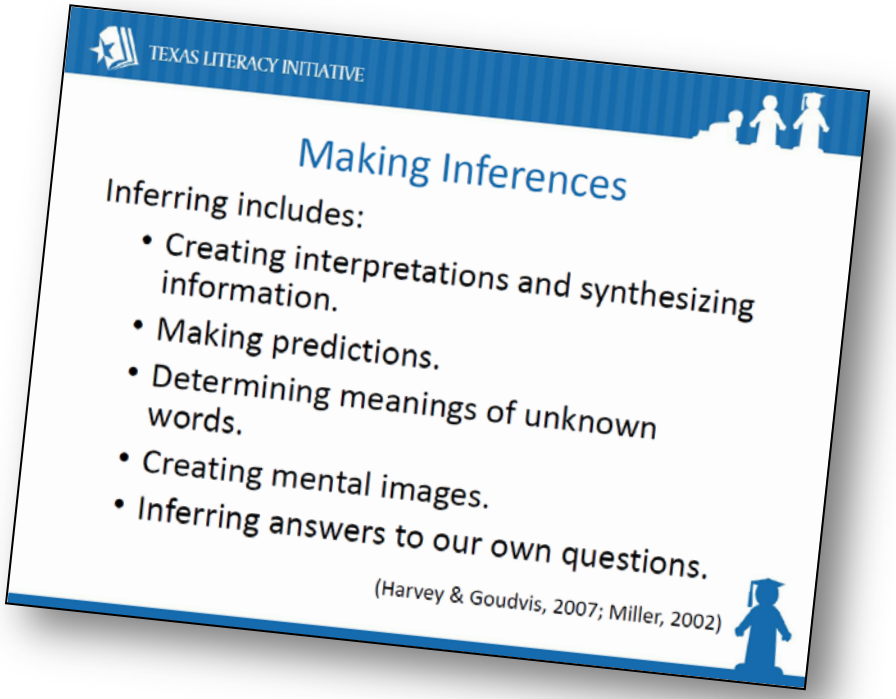


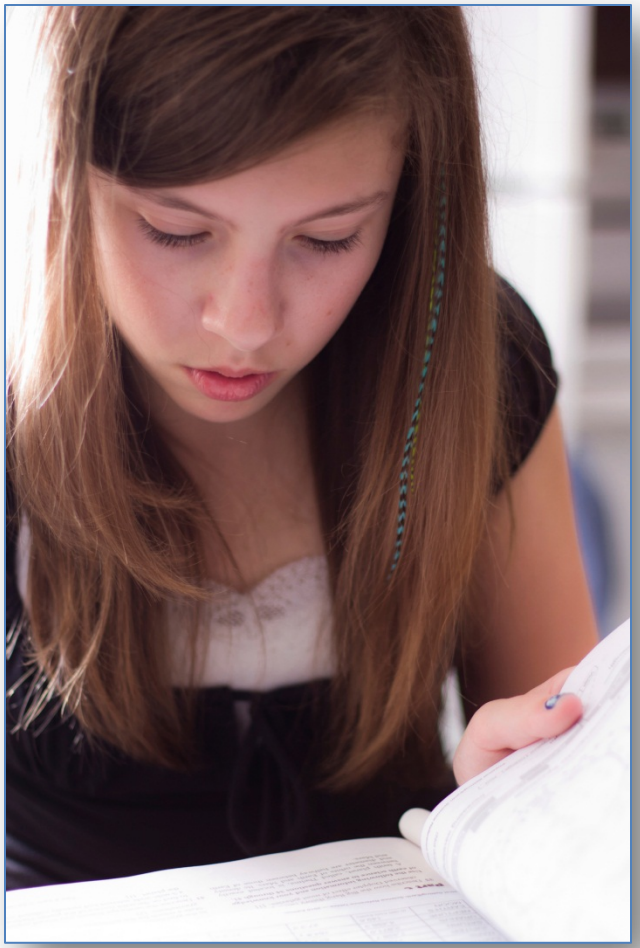
MAKING PREDICTIONS

Making Predictions

"An inference about future information in a text is a prediction. We use the text clues and our background knowledge to predict what will happen next in a story or what we will learn later in a text. We then go through the text to confirm, discard, change, or make new predictions, based on new evidence that comes up."

(Zwiers, 2010, p. 99)

Making Predictions



"Prediction provides us with motivation and purpose for reading. It also helps the mind prepare itself to understand the upcoming ideas in the text."

(Zwiers, 2010, p. 99)

Making Predictions Step 5

- Model making predictions before and during reading.
- Explicitly share what you focused on to help you make the prediction.
- Model reading to confirm/revise your predictions.
- Model making some incorrect, yet logical predictions.

What Do Good Readers Pay Attention to When Making Predictions?

- Title and chapter headings.
- Front and back covers of the book.
- Photos, illustrations and captions.
- Their own questions.
- Their background knowledge about a topic, including vocabulary.

Kelley & Clausen-Grace, 2007

What Do Good Readers Pay Attention to When Making Predictions?

- Their background knowledge about the author, genre, or series.
- Their background knowledge about text organization and text structure.
- What they know about a character or object.
- What has happened so far in the text.

Kelley & Clausen-Grace, 2007

Making Predictions

Predictions…

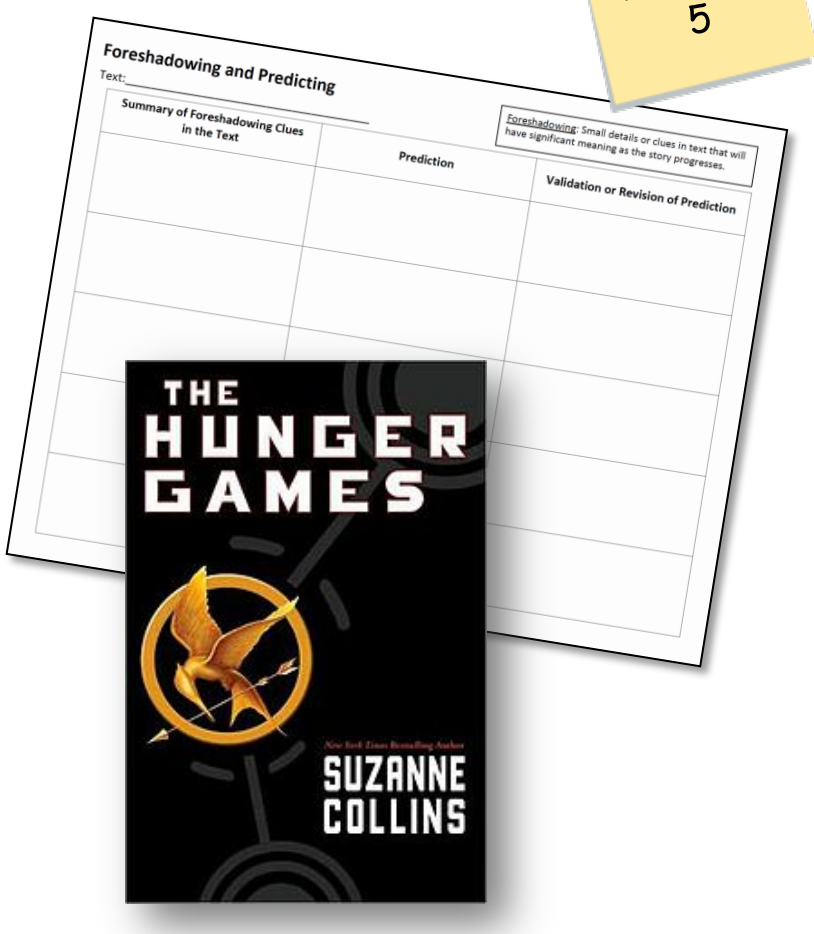
- Can be confirmed or disproved in the text.
- Must be revised as reading continues.
- Help maintain interest in the text.

Making Predictions with Foreshadowing

Handout 5

Foreshadowing:

- Small details or clues.
- Provides hints about things to come.
- Used to make predictions.



Foreshadowing and Predicting

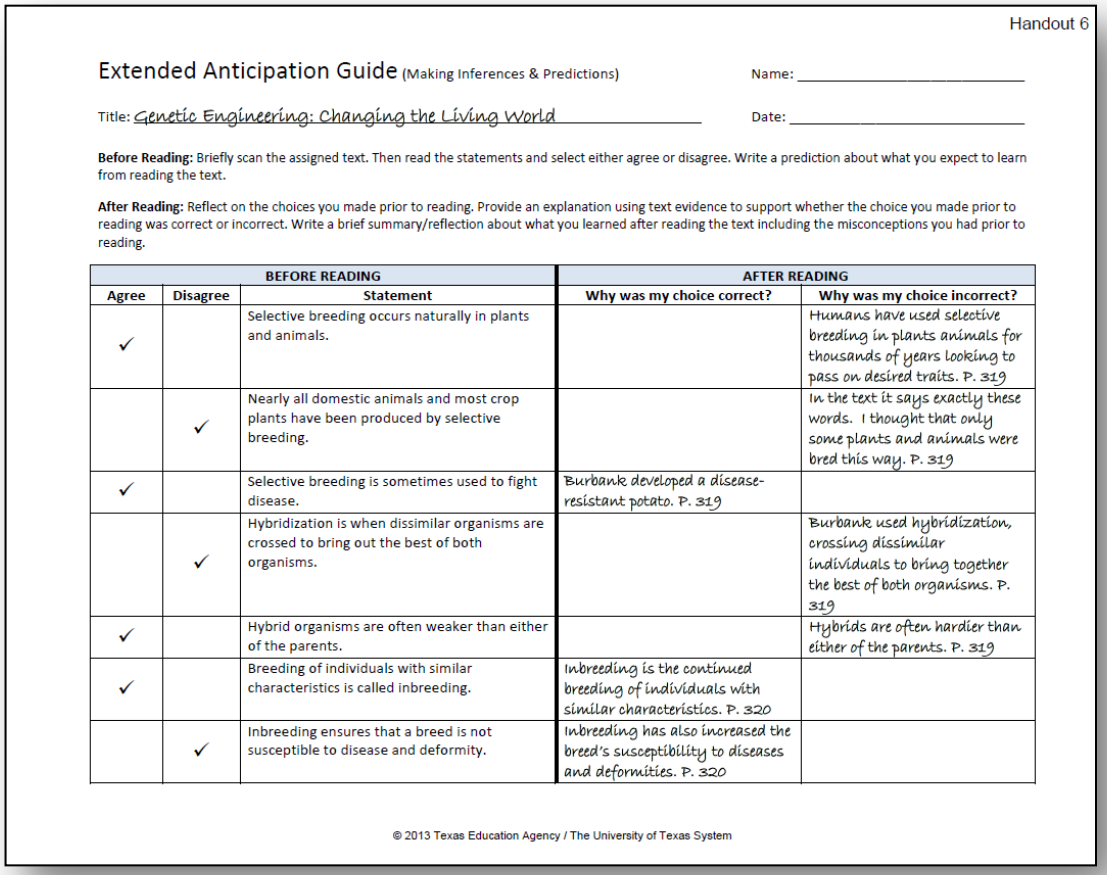
Text: The Hunger Games

Foreshadowing: Small details or clues in text that will have significant meaning as the story progresses.

Summary of Foreshadowing Clues in the Text (text evidence)	Prediction	Validation or Revision of Prediction
•It's Prim's first reaping (p. 15). •Katniss loves Prim more than anything. She watches her as she sleeps, won't runaway and leave her, worries about her and mothers her. •Katniss has tried to protect her by making sure Prim's name is entered only once (p. 15).	Prim will be selected as tribute.	Prim is chosen as tribute but Katniss volunteers and takes her place. (p. 22)
•"In the woods waits the only person with whom I can be myself." (p. 6) Katniss and Gale have very similar lives, responsibilities, beliefs, and talents. •"I call him my friend, but in the last year it's seemed too casual a word for what Gale is to me." (p. 112).	Katniss and Gale will become a couple or more romantic feelings will be revealed.	Katniss begins to care deeply for Peeta. After winning the Games, they are forced to be a couple to protect themselves from President Snow. (p. 355-358) It seems like Gale is out of the picture.
•Katniss is checking out the competition and describes the boy from District 2 as a monstrous boy who lunges forward to volunteer. (p. 45) •They are career tributes, who have trained their whole lives for the Hunger Games. (p. 94).	Tributes from District 2 will be the ones to beat, especially Cato.	Cato is the last tribute left with Katniss and Peeta. (p. 318) Katniss and Peeta become the final tributes and both become victors. (p. 342 & 345)
•Peeta gave Katniss bread she desperately needed to feed her family, even though he gets in trouble with his mom. (p.30-31) •In his interview before the Games, Peeta tells Cesar that he's always had a crush on Katniss. (p. 130)	Peeta will protect Katniss during the Hunger Games.	Peeta works to protect Katniss. Katniss realizes this in pages 247-248. In the end, it's Katniss who saves Peeta's life.
•Rue shadows Katniss and Peeta during training. Katniss thinks of her sister Prim when she sees Rue.	Katniss will befriend Rue.	Katniss and Rue become allies (p. 200). Katniss wants to protect Rue (p.235). Rue dies and Katniss is devastated and feels responsible.

Making Predictions Using Extended Anticipation Guides

Handout 6



Handout 6

Extended Anticipation Guide (Making Inferences & Predictions) Name: _____

Title: Genetic Engineering: Changing the Living World Date: _____

Before Reading: Briefly scan the assigned text. Then read the statements and select either agree or disagree. Write a prediction about what you expect to learn from reading the text.

After Reading: Reflect on the choices you made prior to reading. Provide an explanation using text evidence to support whether the choice you made prior to reading was correct or incorrect. Write a brief summary/reflection about what you learned after reading the text including the misconceptions you had prior to reading.

BEFORE READING			AFTER READING	
Agree	Disagree	Statement	Why was my choice correct?	Why was my choice incorrect?
✓		Selective breeding occurs naturally in plants and animals.		Humans have used selective breeding in plants animals for thousands of years looking to pass on desired traits. P. 319
	✓	Nearly all domestic animals and most crop plants have been produced by selective breeding.		In the text it says exactly these words. I thought that only some plants and animals were bred this way. P. 319
✓		Selective breeding is sometimes used to fight disease.	Burbank developed a disease-resistant potato. P. 319	
	✓	Hybridization is when dissimilar organisms are crossed to bring out the best of both organisms.		Burbank used hybridization, crossing dissimilar individuals to bring together the best of both organisms. P. 319
✓		Hybrid organisms are often weaker than either of the parents.		Hybrids are often hardier than either of the parents. P. 319
✓		Breeding of individuals with similar characteristics is called inbreeding.	Inbreeding is the continued breeding of individuals with similar characteristics. P. 320	
	✓	Inbreeding ensures that a breed is not susceptible to disease and deformity.	Inbreeding has also increased the breed's susceptibility to diseases and deformities. P. 320	

Kelley & Clausen-Grace, 2007, Duffelmeyer & Baum, 1992)

Extended Anticipation Guide (Making Inferences & Predictions)

Name: _____

Title: Genetic Engineering: Changing the Living World

Date: _____

Before Reading: Briefly scan the assigned text. Then read the statements and select either agree or disagree. Write a prediction about what you expect to learn from reading the text.

After Reading: Reflect on the choices you made prior to reading. Provide an explanation using text evidence to support whether the choice you made prior to reading was correct or incorrect. Write a brief summary/reflection about what you learned after reading the text including the misconceptions you had prior to reading.

BEFORE READING			AFTER READING	
Agree	**Disagree**	**Statement**	**Why was my choice correct?**	**Why was my choice incorrect?**
		Selective breeding occurs naturally in plants and animals.		
		Nearly all domestic animals and most crop plants have been produced by selective breeding.		
		Selective breeding is sometimes used to fight disease.		
		Hybridization is when dissimilar organisms are crossed to bring out the best of both organisms.		
		Hybrid organisms are often weaker than either of the parents.		
		Breeding of individuals with similar characteristics is called inbreeding.		
		Inbreeding ensures that a breed is not susceptible to disease and deformity.		

Making Predictions Using Extended Anticipation Guides

Before Reading, Students:

- Briefly scan the text attending to features like titles, headings, photographs and captions.
- Read the statements and select agree or disagree.
- Write a brief prediction about what they expect to learn from the text.

Kelley & Clausen-Grace, 2007, Duffelmeyer & Baum, 1992)

Extended Anticipation Guide (Making Inferences & Predictions)

Name: _____

Title: Genetic Engineering: Changing the Living World

Date: _____

Before Reading: Briefly scan the assigned text. Then read the statements and select either agree or disagree. Write a prediction about what you expect to learn from reading the text.

After Reading: Reflect on the choices you made prior to reading. Provide an explanation using text evidence to support whether the choice you made prior to reading was correct or incorrect. Write a brief summary/reflection about what you learned after reading the text including the misconceptions you had prior to reading.

BEFORE READING			AFTER READING	
Agree	**Disagree**	**Statement**	**Why was my choice correct?**	**Why was my choice incorrect?**
✓		Selective breeding occurs naturally in plants and animals.		
	✓	Nearly all domestic animals and most crop plants have been produced by selective breeding.		
✓		Selective breeding is sometimes used to fight disease.		
	✓	Hybridization is when dissimilar organisms are crossed to bring out the best of both organisms.		
✓		Hybrid organisms are often weaker than either of the parents.		
✓		Breeding of individuals with similar characteristics is called inbreeding.		
	✓	Inbreeding ensures that a breed is not susceptible to disease and deformity.		

Making Predictions Using Extended Anticipation Guides

After Reading, Students:

- Reflect on the choices made prior to reading.
- Provide an explanation using text evidence to support whether or not the choice they made prior to reading was correct.
- Write a brief summary/reflection of what was learned after reading including the misconceptions they had prior to reading.

Kelley & Clausen-Grace, 2007, Duffelmeyer & Baum, 1992)

Extended Anticipation Guide (Making Inferences & Predictions)

Name: _____

Title: Genetic Engineering: Changing the Living World

Date: _____

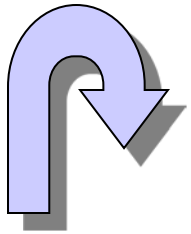
Before Reading: Briefly scan the assigned text. Then read the statements and select either agree or disagree. Write a prediction about what you expect to learn from reading the text.

After Reading: Reflect on the choices you made prior to reading. Provide an explanation using text evidence to support whether the choice you made prior to reading was correct or incorrect. Write a brief summary/reflection about what you learned after reading the text including the misconceptions you had prior to reading.

BEFORE READING			AFTER READING	
Agree	**Disagree**	**Statement**	**Why was my choice correct?**	**Why was my choice incorrect?**
✓		Selective breeding occurs naturally in plants and animals.		Humans have used selective breeding in plants animals for thousands of years looking to pass on desired traits. P. 319
	✓	Nearly all domestic animals and most crop plants have been produced by selective breeding.		In the text it says exactly these words. I thought that only some plants and animals were bred this way. P. 319
✓		Selective breeding is sometimes used to fight disease.	Burbank developed a disease-resistant potato. P. 319	
	✓	Hybridization is when dissimilar organisms are crossed to bring out the best of both organisms.		Burbank used hybridization, crossing dissimilar individuals to bring together the best of both organisms. P. 319
✓		Hybrid organisms are often weaker than either of the parents.		Hybrids are often hardier than either of the parents. P. 319
✓		Breeding of individuals with similar characteristics is called inbreeding.	Inbreeding is the continued breeding of individuals with similar characteristics. P. 320	
	✓	Inbreeding ensures that a breed is not susceptible to disease and deformity.	Inbreeding has also increased the breed's susceptibility to diseases and deformities. P. 320	

Reflect and Share

- How will you teach students to make predictions while reading?
- How does predicting help students to comprehend across the disciplines?



13–1 Changing the Living World

Visit a dog show, and what do you see? You can compare dogs of every breed imaginable, distinguished from one another by an enormous range of characteristics that are the result of genetic variation. Striking contrasts are everywhere—the size of a tiny Chihuahua and that of a massive great Dane, the short coat of a Labrador retriever and the curly fur of a poodle, the long muzzle of the wolfhound and the pug nose of a bulldog. The differences among breeds of dogs are so great that someone who had never seen such animals before might think that many of these breeds are different species. They're not, of course, but where did such differences come from? What forces gave rise to the speed of a greyhound, the courage of a German shepherd, and the herding instincts of a border collie?

Guide for Reading

Key Concepts
- What is the purpose of selective breeding?
- Why might breeders try to induce mutations?

Vocabulary
selective breeding
hybridization
inbreeding

Reading Strategy: Outlining Before you read, write down the blue headings of the section. As you read, list the important information under each heading.

Selective Breeding

The answer, of course, is that *we* did it. Humans have kept and bred dogs for thousands of years, always looking to produce animals that might be better hunters, better retrievers, or better companions. By **selective breeding,** allowing only those animals with desired characteristics to produce the next generation, humans have produced many different breeds of dogs.

Humans use selective breeding, which takes advantage of naturally occurring genetic variation in plants, animals, and other organisms, to pass desired traits on to the next generation of organisms. Nearly all domestic animals—including horses, cats, and farm animals—and most crop plants have been produced by selective breeding. American botanist Luther Burbank (1849–1926) may have been the greatest selective plant breeder of all time. He developed the disease-resistant Burbank potato, which was later exported to Ireland to help fight potato blight and other diseases. During his lifetime, Burbank developed more than 800 varieties of plants.

Hybridization As one of his tools, Burbank used **hybridization,** crossing dissimilar individuals to bring together the best of both organisms. Hybrids, the individuals produced by such crosses, are often hardier than either of the parents. In many cases, Burbank's hybrid crosses combined the disease resistance of one plant with the food-producing capacity of another. The result was a new line of plants that had the characteristics farmers needed to increase food production. **Figure 13–1** shows hybrid daisies developed using Burbank's techniques.

▼ **Figure 13–1** **Humans use selective breeding to pass desired traits on to the next generation of organisms.** Luther Burbank used selective breeding to develop these Shasta daisies, a popular variety.

Miller, K & Levine, J. (2008). *Genetic engineering. Changing the living world.* Prentice Hall Biology (p. 319). Boston, MA: Pearson Prentice Hall.

▶ **Figure 13–2** Inbreeding is required to maintain the characteristics of pedigreed dogs, such as these golden retrievers. However, inbreeding has also increased the breed's susceptibility to diseases and deformities. **Applying Concepts** *What other animals are likely to be inbred?*

Inbreeding To maintain the desired characteristics of a line of organisms, breeders often use a technique known as inbreeding. **Inbreeding** is the continued breeding of individuals with similar characteristics. The many breeds of dogs—from beagles to poodles—are maintained by inbreeding. Inbreeding helps to ensure that the characteristics that make each breed unique will be preserved. The golden retrievers shown in **Figure 13–2** are an example of inbred animals.

Although inbreeding is useful in retaining a certain set of characteristics, it does have its risks. Most of the members of a breed are genetically similar. Because of this, there is always a chance that a cross between two individuals will bring together two recessive alleles for a genetic defect. Serious problems in many breeds of dogs, including blindness and joint deformities in German shepherds and golden retrievers, have resulted from excessive inbreeding.

CHECKPOINT *What is inbreeding?*

▼ **Figure 13–3 Breeders can increase genetic variation by inducing mutations.** This process was used to produce the oil-eating bacteria shown here. This image was made using a scanning electron microscope and has been artificially colored.

(magnification: 6200×)

Increasing Variation

Selective breeding would be nearly impossible without the wide variation that is found in natural populations. This is one of the reasons biologists are interested in preserving the diversity of plants and animals in the wild. However, sometimes breeders want more variation than exists in nature. **Breeders can increase the genetic variation in a population by inducing mutations, which are the ultimate source of genetic variability.**

As you may recall, mutations are inheritable changes in DNA. Mutations occur spontaneously, but breeders can increase the mutation rate by using radiation and chemicals. Many mutations are harmful to the organism. With luck and perseverance, however, breeders can often produce a few mutants—individuals with mutations—with desirable characteristics that are not found in the original population.

Miller, K & Levine, J. (2008). Genetic engineering. Changing the living world. Prentice Hall Biology (p. 319). Boston, MA: Pearson Prentice Hall.

Foreshadowing and Predicting

Text:_____

Foreshadowing: Small details or clues in text that will have significant meaning as the story progresses.

Summary of Foreshadowing Clues in the Text (text evidence)	Prediction	Validation or Revision of Prediction

Extended Anticipation Guide (Making Inferences & Predictions)

Name: _____

Title: Genetic Engineering: Changing the Living World

Date: _____

Before Reading: Briefly scan the assigned text. Then read the statements and select either agree or disagree. Write a prediction about what you expect to learn from reading the text.

After Reading: Reflect on the choices you made prior to reading. Provide an explanation using text evidence to support whether the choice you made prior to reading was correct or incorrect. Write a brief summary/reflection about what you learned after reading the text including the misconceptions you had prior to reading.

BEFORE READING			AFTER READING	
Agree	**Disagree**	**Statement**	**Why was my choice correct?**	**Why was my choice incorrect?**
✓		Selective breeding occurs naturally in plants and animals.		Humans have used selective breeding in plants animals for thousands of years looking to pass on desired traits. P. 319
	✓	Nearly all domestic animals and most crop plants have been produced by selective breeding.		In the text it says exactly these words. I thought that only some plants and animals were bred this way. P. 319
✓		Selective breeding is sometimes used to fight disease.	Burbank developed a disease-resistant potato. P. 319	
	✓	Hybridization is when dissimilar organisms are crossed to bring out the best of both organisms.		Burbank used hybridization, crossing dissimilar individuals to bring together the best of both organisms. P. 319
✓		Hybrid organisms are often weaker than either of the parents.		Hybrids are often hardier than either of the parents. P. 319
✓		Breeding of individuals with similar characteristics is called inbreeding.	Inbreeding is the continued breeding of individuals with similar characteristics. P. 320	
	✓	Inbreeding ensures that a breed is not susceptible to disease and deformity.	Inbreeding has also increased the breed's susceptibility to diseases and deformities. P. 320	

BEFORE READING PREDICTION:

This text is going to discuss selective breeding, hybridization and inbreeding. I think that selective breeding occurs naturally in the world. Some plants and animals strive to become more resistant to disease and they choose to breed differently. I think that hybridization occurs when similar species cross but this often creates a weaker species. Inbreeding is when family members mate. This for sure makes the species weak, like mentally retarded. That's why you can't marry your cousin.

AFTER READING REFLECTION:

I learned that there are two types of selective breeding: hybridization and inbreeding. I thought there were 3 types. Selective breeding doesn't happen naturally in the world. Instead, humans make it happen because they want to produce the best plants and animals they can. Almost every domestic animal and plant have been selectively bred. Hybrids – the crossing of dissimilar organisms can make the species hardier. I thought that it would actually make them weaker. Inbreeding though, does what I thought. It can increase the breed's likeliness that they would get sick or be deformed. The reason why they inbreed though is to keep the traits that are most desirable. I guess breeders just have to be really careful about how far they take it.

Adapted from: Kelley, M.J., & Clausen-Grace, N. (2007). Laying the Foundation for the Metacognitive Teaching Framework. In *Comprehension Shouldn't Be Silent* (pp. 22-41). Newark, DE: International Reading Association. Duffelmeyer, F. A.& Baum, D. B. (1992, May). The extended anticipation guide revisited. *Journal of Reading, 35*(8), 645-656. http://www.jstor.org/stable/40032158

Extended Anticipation Guide (Making Inferences & Predictions)

Name: _____

Title: _____ Date: _____

Before Reading: Briefly scan the assigned text. Then read the statements and select either agree or disagree. Write a prediction about what you expect to learn from reading the text.

After Reading: Reflect on the choices you made prior to reading. Provide an explanation using text evidence to support whether the choice you made prior to reading was correct or incorrect. Write a brief summary/reflection about what you learned after reading the text including the misconceptions you had prior to reading.

BEFORE READING			AFTER READING	
Agree	**Disagree**	**Statement**	**Why was my choice correct?**	**Why was my choice incorrect?**

Extended Anticipation Guide (Making Inferences & Predictions)

Name: _____

Title: _____ Date: _____

BEFORE READING PREDICTION:

_____

_____

_____

_____

_____

_____

_____

_____

AFTER READING REFLECTION:

_____

_____

_____

_____

_____

_____

_____

_____

_____

Adapted from: Kelley, M.J., & Clausen-Grace, N. (2007). Laying the Foundation for the Metacognitive Teaching Framework. In *Comprehension Shouldn't Be Silent* (pp. 22-41). Newark, DE: International Reading Association. Duffelmeyer, F. A.& Baum, D. B. (1992, May). The extended anticipation guide revisited. *Journal of Reading, 35*(8), 645-656. http://www.jstor.org/stable/40032158