

KWL Diagnostic/Summative
Assessment for
**WHERE WE CAME
FROM**

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Assessment Title: KWL Diagnostic/Summative Assessment

Assessment Form: Diagnostic, Summative

Type of Assessment: Constructed Response – KWL and questions

Duration: 30 minutes

Standard (s) Assessed:

SCF. 2.3.2 The student knows that the variation in each species is due to the exchange and interaction of genetic information as it is passed from parent to offspring.

SCF. 2.3.2.8.1 The student knows how dominant and recessive traits are inherited.

Description of Assessment Activity: In the first lesson of the unit, students complete the K and W portions of the KWL Chart, as well as answer the four questions. In the last lesson of the unit, students complete the L portion of the KWL Chart and rewrite answers to the four questions. Students are assessed diagnostically on the K and W portions using a Key, and are summatively assessed on the L portion and questions, using a Rubric and a Key at the end of the unit.

Teacher Directions: NOTE: The KWL Chart is used as a diagnostic assessment in lesson 1 and as a summative and review in lesson 6. Keys are given for both uses.

1. Duplicate the KWL Chart for each student.
2. After initiating the discussion in lesson one, Wild Babies, give each student a blank copy.
3. Assure students that they will not be graded on this.
4. Explain that the K column is where they will write down what they think they know about genetics, dominant and recessive traits, DNA, and/or anything else they can think of.
5. Explain that the W column is where they will list 3 questions about genetics they would like to find out about.
6. Explain that the L will be used later as a review and as a summative grade.
7. Tell students to read and answer the four questions to the best of their abilities.
8. Allow time for students to complete the K and W portions and the questions. (You may want to request that student write in whole sentences, but it isn't required.)
9. Collect and assess the KWL Charts and questions. (Directions for using it as a Summative are included in the lesson, Decoding DNA.)

Student Directions:

1. Complete the K and W portions of this chart.
2. In the K column, include information and questions concerning genetics. Think about dominant and recessive traits, DNA or anything else that you might know about genetics.
3. In the W column, list three questions that you would like to know the answers for concerning genetics, traits, DNA or what we've discussed so far.
4. Answer the four questions at the bottom to the best of your ability. When you've finished, turn your papers over and quietly draw until everyone is finished.

Scoring Method and Criteria: See KWL Diagnostic Key for sample answers. NOTE: Since the KWL summative also becomes a review, students who do not do well on the L portion will probably not do well on the summative test. They may need reteaching.

KWL DIAGNOSTIC/SUMMATIVE CHART



**WHAT I ALREADY KNOW WHAT I
WANT TO KNOW WHAT I LEARNED**

WHAT I ALREADY KNOW	WHAT I WANT TO KNOW	WHAT I LEARNED

Where do my characteristics come from? _____

What is a Punnett Square and how do you use it? _____

What is probability and how is it used in genetics?

If a blue-eyed man marries a brown-eyed woman, can you predict how many of their kids will have blue eyes? If so, how? _____

KWL

DIAGNOSTIC/SUMMATIVE

CHART KEY



WHAT I ALREADY KNOW	WHAT I WANT TO KNOW	WHAT I LEARNED
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These are **SUGGESTED ANSWERS**:

- we get our characteristics (traits) from our parents
- some characteristics (traits) can hide for a few generations
- the characteristics (traits) that can hide are called recessive traits
- sometimes traits like red hair may come from chromosomes that are only seen in cousins, aunts, or great grandparents

SUGGESTED QUESTIONS: These will vary. Look for how and why questions, as well as thoughtful and explorative type questions. Silly and lower order thinking type questions may also appear and will indicate a need for instruction.

Where do my characteristics come from?
Answers will vary, but should use some genetics vocabulary, and reflect a general understanding that inheritance involves chromosomes and DNA that comes from parents and traits that come from the family bloodline.

What is a Punnett Square and how do you use it? A Punnett Square is a chart that, when given enough info about two parent organisms, can be used to predict the genotypes & phenotypes of their offspring.

What is probability and how is it used in genetics? Probability is the chance that something will happen; the likelihood of an outcome. Genetics probability explains the likelihood of the event occurring although it is not 100 % sure.

If a blue-eyed man marries a brown-eyed woman, can you predict how many of their kids will have blue eyes? If so, how? Yes. In order to accurately predict the eye color of their children, one would need to know the genotype of the parents; homozygous or heterozygous. Once the genotype is known, a Punnett square can be used.

KWL DIAGNOSTIC/SUMMATIVE CHART KEY



WHAT I ALREADY KNOW WANT TO KNOW	WHAT I LEARNED
	Please seen next page for items students should list here.

Where do my characteristics come from?

Answers will vary, but should use some genetics vocabulary, and reflect a general understanding that inheritance involves chromosomes and DNA that comes from parents and traits that come from the family bloodline.

What is a Punnett Square and how do you use it? A Punnett Square is a chart that, when given enough info about two parent organisms, can be used to predict the genotypes & phenotypes of their offspring.

What is probability and how is it used in genetics? Probability is the chance that something will happen; the likelihood of an outcome. Genetics probability explains the likelihood of the event occurring although it is not 100 % sure.

If a blue-eyed man marries a brown-eyed woman, can you predict how many of their kids will have blue eyes? If so, how? Yes. In order to accurately predict the eye color of their children, one would need to know the genotype of the parents; homozygous or heterozygous. Once the genotype is known, a Punnett square can be used.

Students should list the following items in the L portion of the KWL Chart.

--Correct definitions or explanations of the following vocabulary words:

inheritance

chromosome

genetics

dominant

dominant

recessive

alleles

heterozygous

homozygous

genotype

phenotype

Punnett Square

--Explanation of how traits are inherited (from parents to offspring based on genetic combinations of dominant and recessive traits)

--Explanation of how dominant and recessive traits are inherited and the results (variation of species is due to combination of genetic traits, may include a Punnett Square, should mention mathematical probability of combinations)

NOTE: Answers in the L portion will depend upon the students and how well they can define, explain, and describe. Refer to the lesson plans and the sample answers and keys within them to see models of acceptable answers.

Rubric for the KWL Diagnostic/Summative Chart

Remember that the K and W portions will be assessed for the Diagnostic (non-graded) and the L portion will be assessed for the Summative at the end of the unit.

	K	W	L
Excellent!	<ul style="list-style-type: none"> -uses many appropriate vocab words and genetic concepts (genetics, chromosome, recessive, traits, characteristics) -clear ideas 	<ul style="list-style-type: none"> -thoughtful questions about genetics -at least three questions are listed -at least one begins with how or why 	<ul style="list-style-type: none"> --all vocab defined correctly --some examples provided for the vocab --includes accurate and detailed explanation of how traits are inherited --includes accurate and detailed explanation of how dominant and recessive traits are inherited.
Acceptable	<ul style="list-style-type: none"> -uses some appropriate vocab and genetic concepts -clear ideas 	<ul style="list-style-type: none"> --mostly thoughtful questions about genetics --at least two questions are listed 	<ul style="list-style-type: none"> --most vocab defined correctly --no examples provided -includes explanation of how traits are inherited although may not be complete --includes explanation of how dominant and recessive traits are inherited, although it may not be completely accurate

<p style="text-align: center;">Needs Improvement</p>	<p>-no use of vocab words or genetic concepts -unclear ideas -- OR blank</p>	<p>--questions are silly or not on the topic of genetics --one or no questions are listed -- OR blank</p>	<p>--definitions severely incomplete or incorrect --no additional examples provided --no explanation of how traits are inherited --no explanation of how dominant and recessive traits are inherited --OR blank</p>
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Scoring for the SUMMATIVE L portion only

Excellent = A

Acceptable = B

Needs Improvement = REDO or a failing grade