

Teaching Science to English Learners

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Outline

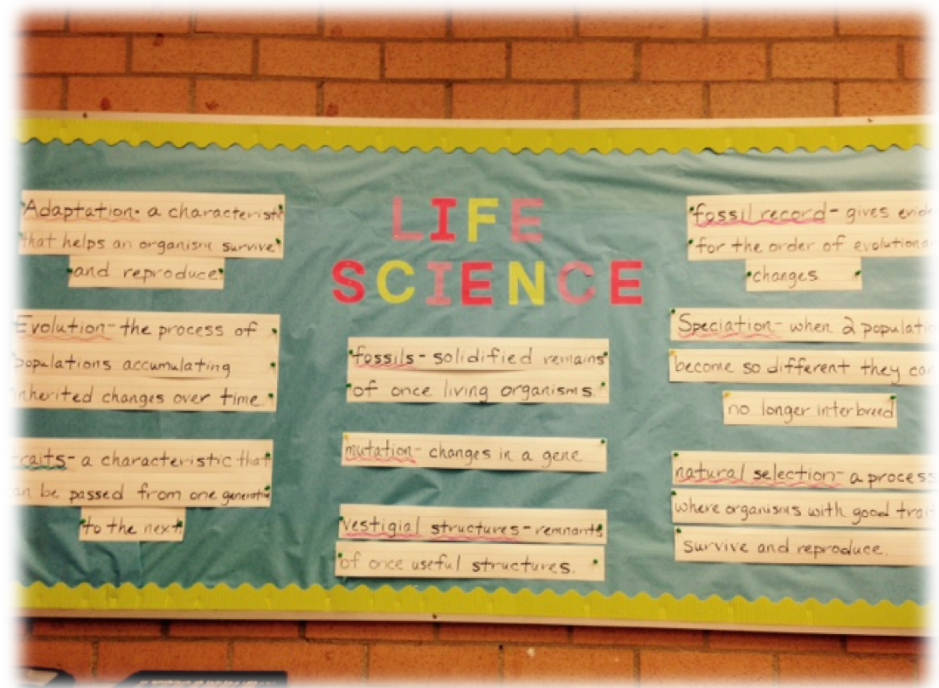
- Strategies for teaching science to ELs
 - Group learning
 - Vocabulary
 - Assessments
 - Demos and modeling
- Example lesson: Introduction to genetics
- Teacher time for lesson planning

Group Learning

- Purposeful seating chart
 - ◉ Newcomers near intermediate and advanced ELs
- Think – pair (group) – share
 - ◉ Provide sentence frames for talking opportunities
- Increased engagement

Vocabulary strategies

- Word walls
 - Post unit vocabulary words in highly visible spot and refer to often
 - Encourage use of word wall during assessments
 - Can also be used for “mortar” words



Vocabulary strategies

- Vocabulary review
 - Science bingo
 - Speed date

Name: _____ Date: _____ Period: _____

Science Bingo!

- Choose 25 of your vocabulary words.
- Write one word in each of the 25 boxes in whatever order you prefer. Please do not repeat words.
- Your teacher will read the definitions of each vocabulary term. Place a bean/stone/chip/etc. in the bingo square when your term is called.
- When you have five in a row, shout "Bingo!"

Assessments

- Multiple choice
- Oral assessments
- Answer in first language
- Allow Spanish/visual vocabulary lists and word-walls

Demos and modeling

- Model assignments.
 - I do, we do, you do.
- Demonstrate lab procedures

Using controlled speech

- Avoid idioms
- Talk slowly
- Pause to define words for students.

Routines

- Great if students know what to expect when they are given an assignment, review, assessment, etc.

Let's give this a try...

Introduction to Heredity and Genetics
Life Science

Name _____ Date _____ Period ____

Everyone is unique – that is to say that there is no one in this world exactly like you. But we do share similar traits as our mothers and fathers, brothers and sisters, even with our grandparents and cousins. A trait is a characteristic, like having curly hair for example.

In the following activity, you will examine your own traits. Check the appropriate response to describe some of your traits. If you aren't sure, ask your neighbor to help you decide.

- Widow's peak Yes _____ No _____ Draw a simple sketch of
- Hair Straight _____ Curly _____ yourself in the space below
- Earlobe Attached _____ Free _____ showing the traits to the left:
- Hand clasp Right over left _____ Left over right _____
- Freckles Yes _____ No _____
- Handedness Right _____ Left _____
- Dimples Yes _____ No _____
- Tongue Roller Yes _____ No _____
- Cleft chin Yes _____ No _____

Our genes carry two forms of every trait – one form came from our mother, and one form came from our father. Some forms of a trait can be dominant, meaning that it is the trait that is expressed or shows up. Some forms of a trait can be recessive, meaning that it is in our genes but is not expressed because it has been covered up by the dominant trait.

In the next activity, you will work with a partner, but both of you will participate and turn in your own worksheet. The two of you will be “parents” and you are going to make a “baby” by passing down the traits listed above. You will each flip the coin once to decide if your “baby” will have the dominant trait or the recessive trait. Use the chart below to reference, and fill in your results.

HEADS = DOMINANT
tails = recessive

Trait	Dominant Expression	Recessive Expression	Mother	Father	Trait combination	Outcome
Widow's Peak	Widows peak (W)	Straight hairline (w)				
Hair	STRAIGHT (S)	curly (s)				
Earlobe	ATTACHED (A)	free (a)				
Hand clasp	LEFT OVER RIGHT (L)	right over left (l)				

Hairline

Widow's Peak



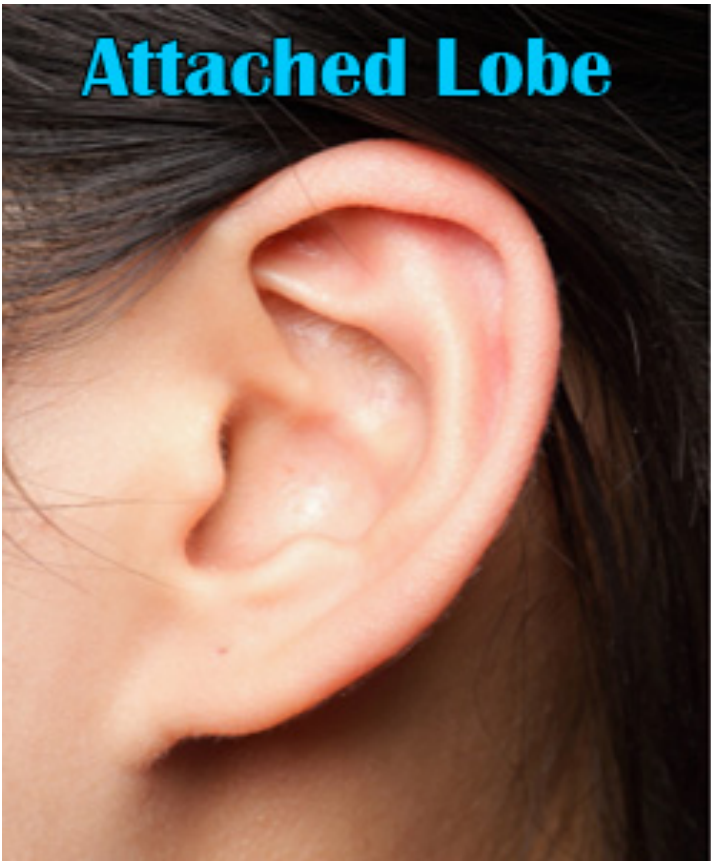
Straight Hairline



Curly hair and straight hair



Earlobes



Hand Clasp

Left over right



Right over left



Freckles



Freckles



No Freckles

Left Handed or Right Handed

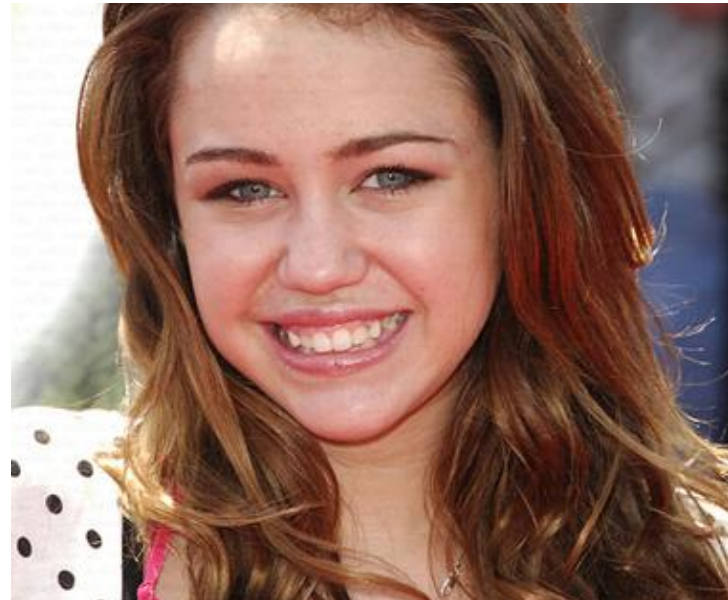


Dimples

Dimples



No Dimples



Tongue roller vs. non tongue roller



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Figure References

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