



### Dr Kathie Nunley's Layered Curriculum®

A 3 layered model of instruction designed to individualize instruction, accommodate the diversity in a mixed-ability classroom, encourage higher levels of thinking and hold the learner accountable for actual learning.

Additional information and support available at: <http://Help4Teachers.com>

Fish & Amphibians: Conflict and Change  
Period \_\_\_\_\_ Points \_\_\_\_\_  
Grading: 86-100 A 71-85 B 55-70 C 40 - 54 D

Name \_\_\_\_\_

**C Layer: 65 points MAX.** (60 pts here to move to B layer). (please make choices in each section)

1. Watch / Listen to the lecture series /take notes 5pts/each 1 2 3 4 5

**\*\*Adapting to environment\*\***

2. Write an autobiography. Include your name, age, your best physical feature, your favorite food, your favorite place to eat, describe your best friend and why, two conflicts you have in your life, where you go to feel the safest, and what you want to be doing five years from now. Write another autobiography. This time you are an amphibian. 15 pts.
3. Design a water dwelling animal like a fish or octopus. Draw/design that same animal living on land. Describe the adjustments or adaptations that were made to move to land. This is an art project. It needs lots of artistic detail. Choose this only if you enjoying detailed drawing. 15 pts.
4. Compose a 10 sentence paragraph describing the difference between frogs and toads. Read it to 2 other classmates. Your paragraph can be in any language OTHER than English. 15 pts
5. Watch any 30 minute documentary-type program on fish or amphibians. List the title / producer. Describe (video, written, illustration) the show in terms of conflicts in the amphibian world. 15 pts

**\*\*Change over Time\*\***

6. Find 2 pieces of conflicting information on Fish or Amphibians between two textbooks. Explain why the books may differ on information. 15 pts
7. Listen to the lecture on amphibians. Take notes. 15 pts
8. How is a frog like a fish (list 10 similarities). How is it different (list 10 differences). 10 pts
9. Using adding machine paper, make a timeline showing when each vertebrate class appeared on earth. You must include a scale. 10 pts.

**\*\*Pressures of Evolution\*\***

10. Watch the video, Toadspell. Write 2 paragraphs summarizing the movie and 2 paragraphs on conflicts you saw in the movie and how change resulted from those conflicts. 15 pts
11. Listen to the lecture on fish. Take notes. 15 pts.
12. Write a piece of poetry describing either conflict or change in an amphibian's world. Get written feedback from your English teacher. 15 pts
13. Read the chapter on Fish or Amphibians from any textbook. Outline the key concepts. Be prepared to summarize your reading. 15 pts.

**"B" layer Choose One for 15 points**

1. How fast does a fish swim in MPH?
2. Which moves faster, a fish or a frog?
3. How does temperature affect fish?
4. Do frogs have taste buds?

**"A" layer. choose ONE for 20 points ( submit to drop box)**

1. Research the current role of the Fish and Wildlife Division in the State. Write a letter to your state Senator arguing either for or against the continued funding of that program.
2. Which toads are facing extinction around the globe? Why? What can be done?

\_\_\_\_\_parent signature contact phone #\_\_\_\_\_

\_\_\_\_\_ / 50 point exam will be given over this unit on Day 6.

# Polynomials in the Real World\*

(Layered Curriculum® for Algebra I)

## C Layer (evaluating, adding, subtracting polynomials) 50 points

1. I have an understanding of the following terms: (pass the quiz) 10 pts  
\_\_\_\_\_ Monomial \_\_\_\_\_ Binomial \_\_\_\_\_ Trinomial \_\_\_\_\_ Polynomial

Suggestions of how to learn these: (try 2 of these)

- Listen to the lecture on day one
- Read about these in your textbook
- Divide a white sheets into 4 parts, fill each part with samples of these.

2. I know and can identify these parts of a polynomial: (pass quiz) 10 pts  
\_\_\_\_\_ leading term \_\_\_\_\_ constant term \_\_\_\_\_ coefficients \_\_\_\_\_ identify degrees

Suggestions on how to learn these: (try 2 of these)

- Listen to the lecture on day one
- Read about these in a textbook
- Look them up on Purplemath.com and explain them to a family member.

3. \_\_\_\_\_ I can EVALUATE Polynomials!! (show me) 15 points.

How can I learn to evaluate polynomials? Suggestions: (try 2 of these)

- Listen to the lecture on day two
- Build 2 versions of a cube. Build 2 versions of a square. Build a row for each. Write it "mathematically" on a piece of paper or dictate it to a friend to write.
- Do some practice paper problems (in sheet bin)
- Watch Mr Nunley evaluate them using Sketch-up.

4. \_\_\_\_\_ I can add polynomials! (20 points)

- Listen to the lecture on day three or read about it on Purplemath.
- Add together they 2 problems you built for #3b. Write it out
- Do some practice paper problems (in sheet bin)

## B Layer - 30 points

Model a section of a warehouse where Ipods are stacked in cubes of 64 ( $x=4$ ). You start on Monday with 6 cubes ( $6X^3$ ). On Friday you have 8 ipods left. You sell them in flats ( $x^2$ ), quads ( $X$ ) and single units. Show how this could have happened. (choose one)

- Using sketch up
- Using our plastic cube station
- Drawing it on a poster (showing 3-D)
- Writing a story.

## A Layer - 20 points

I need a barn for my 2 milk cows. I want a place to store hay, feed, milk the cows and park the tractor. Materials come in (\$30)cubes, (\$20)squares, (\$15)rows and (\$10)single 2 ft blocks. The cubes are the cheapest cost per foot and it goes up from there.

- With a partner, design my barn using Sketch Up. What's it going to cost me? Defend your design.
- Using the materials in the shoe boxes and a partner or alone - build the above barn. Defend your design.

*\*Common Core Standards A-APR Perform arithmetic operations on polynomials, Use polynomial identities to solve problems. Modeling.*

## **How do I begin Layered Curriculum®? - SLOWLY!**

Look at this as an evolution toward student-centered instruction rather than a leap. Start with what you are currently doing and then slowly add these

### **Layered Curriculum® Keys:**

#1: CHOICE - Add student choice through an assignment menu. The menu should be tailored to suit your particular population, including your lowest and highest ability student. (even in C layer)

#2: ENCOURAGE HIGHER LEVEL THINKING by requiring more in-depth, original and/or critical thinking for improvement of grade.

#3: INCREASE ACCOUNTABILITY through brief one-on-one discussion, small group discussion or homework small group forums. (you may need to work up to total oral defense).

## **Begin with a "Daily Method of Layered Curriculum®:**

Day 1: Whole Class Instruction followed by 2 or 3 choices of "seat work"

Day 2: Whole Class Instruction followed by 2 or 3 choices of "seat work".

Day 3: Whole Class Instruction followed by 2 or 3 choices of "seat work".

Repeat as needed

Day 4 (or ?): Whole class instruction on a B layer assignment.

Day 5 (or ?) Whole class instruction on an A layer assignment.

(You may need to devote more than one day to a topic. On shorter period schedules, include Whole Class Instruction every other day and allow students to work on their project independently during the "off" days.

Longer block schedules generally allow for a topic per day)

## **Simple Rules of Thumb to Avoid Making the Top 5 Most Common Mistakes in Starting Layered Curriculum®**

### **1. Students sit, the teacher moves.**

I see so many classrooms where the teacher will remain at his/ her desk and tell the students to come up front when they have something to grade, or "sign-up" when they have something to grade. The problem with this is that you may discover at the end of the unit, that there are some students you never saw! They NEVER came to have something graded. You as the teacher need to move systematically around the classroom. Check with every student every day to make sure they are on-task and moving toward their goals. Grade assignments in their territory, not yours.

### **2. Use a "Daily Method" of Layered Curriculum® for the first unit or two.**

Another common error is teachers starting with a "traditional" style unit and discovering that many students never even attempt the top 2 layers! The advantage of a daily method is that you are literally walking the entire class through all 3 layers, together, with lots of support and instruction. Now students see that all 3 layers are possible for them. Remember, students should be expected to attempt all 3 layers on every single unit!

### **3. Keep units short - especially in the beginning.**

It takes time for teachers and students to learn to operate in a Layered Curriculum® classroom. Allow for a learning period by keeping your first units rather short. One week or less is not a bad plan. Even as you move forward, I recommend keeping units to 2 weeks maximum. In longer units, students get lost, procrastinate, and can't learn the system as easily.

### **4. Don't be afraid to keep a significant amount of teacher, direct instruction.**

Not all assignments need to be optional. There are many things you may want to do as a whole group with lots of direct instruction. Don't be afraid to do that. Much of your C layer may even look like a traditional classroom.

### **5. Offer at least 3 times as many points as required for a grade.**

Many times I see C layer assignments set up in such a way that the student would need to do nearly every assignment and to near perfection just to earn a C grade. Try to put a lot of latitude in the layer. If the student needs 70 points to finish this layer, offer about 200 points worth of options. But don't feel the need to go overboard on the number of assignment choices, just increase the point value of assignments if needed so that you and your students are not overwhelmed.