

## What is Differentiation?

A process used to maximize student learning by improving the match between a student's individual needs and the curriculum.

- A general term used to describe the range of strategies, which are used to ensure children's needs are met.
- A broad term referring to the need to tailor teaching environments and practices to create appropriately different learning experiences for different students.
Adapting the curriculum to meet the unique needs of learners by making modifications in complexity, depth, and pacing.




## Why Differentiate?

- Pressure to standardize learning
- Students differ in abilities, interests, and learning styles
- Learning more enjoyable when choices are available
- Enjoyment and engagement contribute to higher achievement
- And, of course, the state says you must!



## Differentiation Strategies

> Curriculum Compacting
> Independent Projects
$>$ Tiered Assignments
> Flexible Grouping
> Learning or Interest Centers
> Varying Questions
Mentorships
Learning Contracts

## The Value of Assessment or ...

You can't figure out what to teach 'em if you don't know 'em!

Interest Inventories
Me, Myself, and I
Interest-a-lyzer
Learning Profile Inventories
Preassessment Options - Ensure the Mastery of Basic Skills!

## Ensure the Mastery of Basic Skills:

\(\left.\left.$$
\begin{array}{l}\text { Mastery } \\
\begin{array}{l}\text { Recognition of situation } \\
\text { requiring repeated addition, } \\
\text { uses multiplication to shorten }\end{array} \\
\text { solution process }\end{array}
$$\right] \begin{array}{l}Uses variety of basketball <br>
passes depending on best <br>

strategy for the moment\end{array}\right]\)| Explain role of any word in |
| :--- |
| sentence \& explain how role |
| changes based on placement |

Not Mastery
Can automatically recite multiplication facts

Primarily uses the bounce pass in basketball
regardless of its potential effectiveness

Can match parts of speech to its definition


## Preassessment Options

, Textbook Pretest
, Student/Teacher Conference - as short as a 5 minute talk
, K-N-W Chart - What do I Know, Need to know \& Want to know
, Journal - Write what you know about...

- List - If I say ...

What does it make you think of?

- Product - Draw a bar graph...

Use the graphing calculator to plot...
Concept Map...
Five Hardest


Questioning in the Classroom



## Questions that Differentiate?

By their very nature open-ended questions differentiate.
All students must think.
Questions targeted toward readiness levels as students pull from prior knowledge and information gained from the classroom activity. Allows answer at level of understanding.
Detailed explanation of photosynthesis vs. plants need sun and water to survive.
All can contribute and all contributions are respected.

## Open Ended Questions:

## Have no "right" answer

Can be discussed and debated
Provoke and sustain student inquiry
Raise other important questions

- Address the conceptual or philosophical foundations of a discipline

Stimulate vital, ongoing reflection of big ideas and assumptions

## Wait Time

Provide time for reflection
Students may be resistant to "having to think"
Wait Time
Averages one second or less.
Students whom teachers perceive as slow or poor learners are given less wait-time than those teachers view as more capable.
Increase in wait-time over three seconds has a positive effect on the number of higher cognitive questions asked by teachers.

## Teaching Children to Ask Questions

Students who ask questions are active learners.
Students learn to ask questions by asking questions.
Students learn to ask good questions by asking questions and then receiving feedback on them.
Students learn to become scholars by learning to ask good questions.

## Fat and Skinny Questions

How do these 2 questions differ?
How many legs to you have?
How would your life be different if you had 3 legs?
"I think the $\mathbf{3}$ legs question is fat because it takes up a lot of space in your brain to think of an answer. The 2 legs one is skinny because it hardly takes up any thinking space."

Mackenzie, $2^{\text {nd }}$ grade

| Fat Question Starters | Skinny Question Starters |
| :--- | :--- |
| How might...? | How many...? |
| Who should...? | Who was...? |
| When might...? | When did...? |
| Predict...? | What is...? |
| Why do you think...? | Can...? |
| Where might...? | Where did...? |
| In what ways...? | Did...? |
| What do you think about...? | Will...? |
| Why do you agree/disagree <br> with...? | Do you agree/disagree with...? |
| What advice would you give...? | How did...? |
| What else could...? | What did...? |

The Revised Bloom's Taxonomy


## So... what do you do with it?

Develop higher order thinking activities.

Formulate questions.
Help students to develop "question asking skills".

## Curriculum Compacting

Used to modify and/or streamline the regular curriculum to eliminate repetition of previously mastered material, upgrade the challenge level of the regular curriculum, and provide time for enrichment and/or acceleration activities.

## Compacting Steps

1. What to do you want them to know?
2. What do they know?

Offer enrichment or acceleration activities to those who already know it.
4. Keep records for accountability.
http://www.gifted.uconn.edu/siegle/Curriculum
Compacting/INDEX.HTM


## Five Hardest

Teacher or student selects the 5 (or other number) most difficult problems on the page
Do with $\mathbf{8 0 \%}$ accuracy and...
NEATLY!
Buy self out of the remainder of the problems on the page

## Independent Study/Mentorship

Individual or small group investigations
Student(s) identifies area of interest
Latrell and Jasmine - Clocks
Kyle - Civil War
$7^{\text {th }}$ graders - wetlands
Identify audience
Custodian
$8^{\text {th }}$ Graders
Town Council
Teacher helps student narrow focus
High School students as mentors
Community members as mentors

## Think-Tac-Toe

## Learning Centers

Tied to the curriculum
Different work for different students
Open ended activities
Interest centers
Based on student interest
Collection of materials related to topic




## Fleming, KY - Civil War

| Dramatize (act out) <br> an important event <br> during the time <br> period. | Create a timeline of the <br> major events of the Civil <br> War. | Write a story from the <br> point of view of an <br> escaping slave. |
| :--- | :--- | :--- |
| Create a PowerPoint <br> presentation about an <br> important event <br> during the Civil War. | Compile a song book <br> depicting the feelings of <br> the time period. Include <br> illustrations. | Read a picture book <br> about the Civil War <br> and create a collage <br> depicting what you <br> learned. |
| Develop a board <br> game dealing with the <br> Civil War. | Research a significant <br> individual and present <br> findings to the class using <br> an informational poster. | Make an ABC book <br> using terms from the <br> unit to share with 2nd |

## What constitutes a tiered activity?

- A focus on a key concept - parallel tasks
- Adjust to students' achievement levels
- Adjust number of steps to the students' productivity levels
- Students working with appropriately challenging tasks

Result = Respectable work for everyone

- Students understand why they are all not doing the same thing.


## Fleming, KY - Weather - $1^{\text {st }}$ Grade

| Create a wind <br> detector. | Chart the weather <br> for one week. | Compile a list of <br> weather words. |
| :--- | :--- | :--- |
| Write a story about <br> your favorite <br> weather and/or <br> season. | Draw a picture of <br> your favorite <br> weather. | Demonstrate <br> appropriate dress for <br> various kinds of <br> weather (fashion <br> show). |
| Perform a weather <br> related song. | Create an oral report <br> on weather safety. | Compare inside and <br> outside temperatures <br> at two different <br> times a day for one <br> week. |

## Tiered Activities

Tiered Instruction features:
$\checkmark$ Whole group introduction and initial instruction
$\checkmark$ Identification of developmental differences
$\checkmark$ Increase or Decrease the:
$\checkmark$ Abstraction
$\checkmark$ Extent of Support
$\checkmark$ Sophistication
$\checkmark$ Complexity of goals, resources, activities \& products

## Kindergarten - Classification

## Tier I

Classify leaves by shape and color

- Tier 2
${ }_{\square}$ Classify leaves by shape and one other property
- Tier 3

Find 3 ways your leaves could be classified

$\qquad$

## Natural Resources

Prompt 1:Our school custodians have a problem. Each day they throw out a large amount of paper. They would like to save as many trees as possible and would like to come up with a plan to recycle the paper used in the classrooms. Your job is to come up with a plan for the custodians.
Step 1: With a partner, talk to the custodians to find out what they do with the paper now. Ask them if they have any ideas about how to solve the problem.
Step 2: With your group, brainstorm ideas for solving the paper problem.
Step 3: Use the PMI (Plus, Minus, Interesting) strategy to sort your ideas
Step 4: Write up 2 different plans using your "Plus" ideas.
Prompt 2: Every day our custodians throw out a tremendous amount of trash. What can we do at our school to reduce the amount of trash we throw out each day?
Think about these different types of trash:
-Paper

- Food
-Cans and other metals
Come up with a plan that you can present to the principal that explains your solution to our trash problem.
Prompt 3: Every day our custodians throw out a tremendous amount of trash. What can we do at our school to reduce the amount of trash we throw out each day? Come up with a plan that you can present to the principal that explains your solution to our trash problem


## Tiered Activity: Biographies

| Level | Prompt |
| :--- | :--- |
| Tier 1: These students benefit <br> from structure and direct <br> instruction. | Write a biography of your famous person. Use the timeline <br> you created to help you organize your ideas. Remember to <br> answer the following questions as you write. <br> -When and where was your famous person born? <br> -Where did your person live while growing up? <br> -What was his or her childhood like? <br> -What did he or she do when he or she became an adult? <br> -Why is your person famous? |
| Tier 2: These students can <br> organize ideas without too <br> much prompting. | Write a biography of your famous person. Use your timeline <br> to help you organize your ideas. Remember to emphasize why <br> your person is famous. |
| Tier 3: These students thrive <br> on high levels of challenge. | Tell the reader about your famous person's life through a <br> series of letters written over his or her lifespan from that <br> person to a friend. |

Persuasive Essay
Students will...

|  | Basic | Intermediate | Advanced |
| :---: | :---: | :---: | :---: |
| O | Write a cohesive paragraph with a main idea and supporting details. | State a point of view and cite multiple reasons to defend that viewpoint. | Expand the quality of their essay by adding multiple, credible sources of support. |
|  | Describe their opinion about a topic by writing 5-6 detailed sentences explaining their opinion - to be assessed using the NYS independent writing rubric. | Use the Learning Activity as a rough draft to develop a multiparagraph persuasive essay - to be assessed using the NYS independent writing rubric. | Write a persuasive essay using multiple reasons, logical explanations and credible sources to support their point of view - to be assessed using the NYS independent writing rubric. |

## Remember:

## Start small

## Make friends and share

## Your mantra:

"Different, not more"


You need two wooden cubes or blank dice and a thin permanent marker.
\#1 - on each side of the cube write:

\#2 - on each side of the cube write:
Can
Is
Might
Will
Did
Would/Could/Should


Great place to purchase cubes - www.barclaywoods.com - select Craft cubes and they are around $\$ 0.08$ each

## Planning the Ultimate Vacation

## Purpose

The purpose of this task is to assess the student's ability to effectively plan and budget for a vacation within given confines.

## Knowledge, Skills, and Dispositions to Assess

Students will demonstrate their ability to...

- read and interpret maps
- organize information about geography by preparing maps, charts, and other graphic displays
- acquire, analyze and synthesize information about geography, which has been obtained from a variety of sources such as maps, texts and other reference sources
- prepare a budget


## Related Standards of Learning

Students will ...

- apply critical reading and reasoning skills
- select the best sources for a given purpose
- use a variety of planning strategies to generate and organize ideas
- solve problems that include addition, subtraction, multiplication and division
- solve multi-step consumer application problems involving decimals
- present data and conclusions in paragraphs, tables, or graphs


## Prerequisite Skills

- Familiarity with reading and interpreting maps
- Basic reading skills
- Basic writing skills
- Basic math skills


## Required Materials

- Access to computers with Internet capability
- Travel brochures, restaurant guides, maps, etc.
- Calculators

Context, Form, Rater

This task is designed to be completed in 3-4 class periods and to be rated by the teacher. Students may work alone, or in groups. (See teacher notes.) Portions of the task may be suitable for homework, although most parts require access to maps, travel brochures, and other geographic materials that may not be equally available to all students in their home setting.

## Prompts

There are three prompts. Prompt One is for students functioning below grade level in English, geography, and math skills and/or who need help with organizational skills. It includes more specific parameters and an extensive graphic organizer to help with the budget portion of the task. Prompt Two is for students functioning at grade level in English, geography, and math. It includes a moderate degree of help with defining task parameters. Prompt Three is for students working above grade level in English, geography, and math and who can function with a greater degree of ambiguity. Although the tasks differ, the rubric remains the same for each prompt.

## Additional Notes to Teacher

Teachers may wish to fill out the planning sheet attached to Prompt One before assigning destinations and budget amounts to individual students. (A trip of about 1000 miles, as presented in Prompt One, will cost approximately $\$ 2000$.)

Teachers may wish to provide intermediate deadlines for tasks for those students who struggle with organizational and planning issues.

If this task is adapted to group work, teachers may wish to add a group-work component to the rubric. In this case, teachers should make be sure to provide for individual accountability for outcomes.

## The Ultimate Vacation <br> Prompt One

The AAA Travel Agency in your town is extremely shorthanded and needs additional staff to help travelers plan their vacations for next summer. A list of destinations has been created. Your task will be to plan a road trip for a family of four ( 2 adults, 2 children under 12) who want to visit an interesting destination for their vacation next summer. You will be told the maximum distance they wish to travel and how much money the family has budgeted for the trip. Your will have access to resources such as maps, tour guides, brochures, the Internet, etc. Use the attached graphic organizer to help you do the following:

1. Calculate the mileage on available routes from your town. Identify the most direct route (the shortest distance in miles to the destination). This is the route the family prefers to travel so that they spend the most time possible at their destination.
2. Calculate the approximate cost of gas for the trip. (Assume their car gets 30 miles to the gallon and gas costs an average of $\$ 1.12 /$ gallon.)
3. The family plans to average 50 miles per hour while driving and travel 6 hours a day. How long will it take them to get to their destination?
4. How many nights will they need to spend in hotels on the way to and from their destination? If they stay 4 nights at their destination what will their total cost be for hotels? (Assume that a hotel room costs an average of $\$ 75$ per night and that the family will stay in one room.)
5. The family will eat three meals a day. Budget $\$ 75$ per day. Calculate total meal cost for the complete trip.
6. Once at the destination, the family will need recommendations on what to do. The family's entertainment budget is approximately $\$ 100 /$ day. Make recommendations on the best way to spend this money. Be sure you balance the entertainment and activity needs of both the adults and children of the family!
7. Total the cost of travel to the destination, the 4-day stay at the destination, and the cost of the trip back to your town. (If you wish, you may plan an alternative route for their return trip.) Assume the family will average the same amount of driving time per day on the return trip as on the trip to their destination.
8. Are you within the budget? If not, make whatever changes and/or recommendations you need to be within budget.

Now design a detailed itinerary for the family that explains their options for travel and your best recommendations for their trip. Be sure your itinerary is easy to read and understand, since it will be mailed to the family. Include budget information and recommendations, as appropriate. Create a map (drawn to scale and including all important map elements) and a set of written directions that tells the family what routes to take, when to turn onto a new route, when and where to stop for the night, etc. from initial departure to safe return home.

BONUS: Include with your itinerary both an itemized estimate and a detailed explanation of additional expenses that the family may incur on this vacation in order to help them plan more completely and accurately.

You will be evaluated on your ability to advise the family appropriately, the quality of the maps and itinerary you prepare, and the accuracy of your budget. See the attached rubric for more complete information.

# The Ultimate Vacation <br> Planning Sheet Prompt One 

## DESTINATION:

$\qquad$

## BUDGET:

$\qquad$

1. Mileage: (Star the most direct route.)


One way $\quad=\quad$ miles
X 2 (roundtrip) $=$ miles
$\div 30 \mathrm{mpg}$
$=$ $\qquad$ gallons
X \$1.12/gallon $=4$
(Total cost of gas for trip)
4. Cost of hotel

Days of travel


X \$75/night

```
= __ days
= + _
```

$=$

```
\(=\) Total hotel
```

X 2 (roundtrip)
5. Cost of meals

Total days away from home
X $\$ 75$ (cost per day)
6. Entertainment

Total days at destination
X \$100/day
$=$ $\qquad$ days
$=$ husivis Total meals
$=$ _ 4 days


Add up shaded amounts:
GRAND TOTAL COST OF TRIP:

## The Ultimate Vacation <br> Prompt Two

The AAA Travel Agency in your town is extremely shorthanded and needs additional staff to help travelers plan their vacations for next summer. A list of destinations has been created. Your task will be to plan a road trip for a family of four ( 2 adults, 2 children under 12) who want to visit an interesting destination for their vacation next summer. You will be told the maximum distance they wish to travel and how much money the family has budgeted for the trip. You will have access to resources such as maps, tour guides, brochures, the Internet, etc.

1. Calculate the mileage on available routes from your town. Identify the most direct route (the shortest distance in miles to the destination). This is the route the family prefers to travel so that they spend the most time possible at their destination.
2. At current prices, calculate the approximate cost of gas for the trip. (Assume their car gets 30 miles to the gallon.)
3. The family plans to average 50 miles per hour while driving, travel 6 hours a day, stopping twice to eat for an hour each time, how long will it take them to get to their destination? How many nights will they need to spend in hotels on the way? (The family will stay in one room.)
4. The family will eat three meals a day. Make a recommendation about how much, on average, to budget for each meal. Justify your decision. Calculate the approximate total meal cost for the trip.
5. The family will stay 4 nights at their destination. Calculate hotel and meal costs for a 4-night stay.
6. Once at the destination, the family will need recommendations on what to do. The family's entertainment budget is approximately $\$ 100 /$ day. Make recommendations on the best way to spend this money. Be sure you balance the entertainment and activity needs of both the adults and children of the family!
7. Total the cost of travel to the destination, the 4-day stay at the destination, and the cost of the trip back to your town. (Please plan an alternative route for their return trip.)
8. Are you within the budget? If not, make whatever changes and/or recommendations you need to be within budget.

You will also need to design a detailed itinerary for the family that explains their options for travel and your best recommendations for their trip. Be sure your itinerary is easy to read and understand, since it will be mailed to the family. Include budget information and recommendations, as appropriate. Create a map (drawn to scale and including all important map elements) and a set of written directions that tells the family what routes to take, when to turn onto a new route, when and where to stop for the night, etc. from initial departure to safe return home.

BONUS: Include with your itinerany both an itemized estimate and a detailed explanation of additional expenses that the family may incur on this vacation in order to help them plan more completely and accurately.

You will be evaluated on your ability to advise the family appropriately, the quality of the maps and itinerary you prepare, and the accuracy of your budget. See the attached rubric for more complete information.

## The Ultimate Vacation <br> Prompt Three

The AAA Travel Agency in your town is extremely shorthanded and needs additional staff to help travelers plan their vacations for next summer. A list of destinations has been created. You will be assigned a favorite client of the agency, a family of four (2 adults, 2 children under 12). The family has just purchased a brand new mini-van that they plan to take on vacation this summer. Your task will be to suggest an interesting road trip for them to take during this vacation. You will be told how much money the family has budgeted for their trip. You are eager to present them with an interesting and highly appealing trip. You will have access to resources such as maps, tour guides, and brochures, the Internet, etc.

Your task is to do the following:

1. Choose a destination within a reasonable driving distance from your town. Calculate the mileage on available routes. Identify the most direct route. This is the route the family usually prefers to travel so that they spend the most time possible at their destination.
2. Calculate the approximate cost of gas for the trip Justify your estimate.
3. The family prefers to average 50 miles per hour while driving, travel 6 hours a day stopping twice to eat for an hour each time. How long will it take them to get to the destination? How many nights will they need to spend in hotels on the way? Check guidebooks for a hotel that has at least a 2-diamond rating. They prefer hotels that include breakfast. The family usually stays in one room when they travel. Compute hotel costs for each stopover.
4. The family eats three meals a day. Calculate average total meal costs for each trip. Suggest a specific restaurant (or type or restaurant, such as Shoney's, etc.) for each meal. The family generally eats at fast food or family-style restaurants, but they like to splurge on one fancy dinner per trip. You will need to make a recommendation for when and where to enjoy this dinner.
5. The family prefers to stay at least 4 nights at their destination. Calculate hotel and meal costs for a 4-night stay.
6. Once at the destination, the family will need recommendations on what to do. The family's entertainment budget is approximately $\$ 100 /$ day. How can they best spend this money? Be sure you balance the entertainment and activity needs of both the adults and children of the family!
7. Suggest at least 1 day-trip. (They must be able to drive to the site, see what they want to see, and return to the hotel in the evening.) Plan a trip that is likely to be interesting to both adults and children.
8. The family prefers to take a different route home from their trip.
9. Total the cost of travel to the destination, the 4-day stay at the destination, and the cost of the trip back to your town. Are you within the budget you were given? If not, make whatever changes and/or recommendations needed in order to be within budget.

Now design a detailed itinerary for the family that explains their options for travel and your best recommendations for their trip. Be sure yoursitinerary is easy to read and understand, since it will be mailed to the family. Include budget information and recommendations, as appropriate. Create a map (drawn to scale and including all important map elements) and a set of written directions that tells the family what routes to take, when to turn onto a new route, when and where to stop for the night, etc. from initial departure to safe return home.

BONUS: Include with your itinerary both an itemized estimate and a detailed explanation of additional expenses that the family may incur on this vacation in order to help them plan more completely and accurately.

You will be evaluated on your ability to advise the family appropriately, the quality of the maps and itinerary you prepare, and the accuracy of your budget. See the attached rubric for more complete information.

## The Ultimate Vacation

Rubric

|  | STILL IN TRAINING | TRAVEL AGENT | WORLD CLASS PLANNER |
| :---: | :---: | :---: | :---: |
|  | Little or no evidence of logic is applied to the analysis and development of your budget. Mathematical calculations and/or estimations are incorrect, making your budget plan unusable. | You use logic to analyze and solve budget problems. Appropriate mathematical strategies are chosen, resulting in accurate calculations and/or estimations. | Budget problems are analyzed and solved using logic. Appropriate mathematical strategies are chosen which enable you to accurately calculate or estimate needed figures. The travel budget is not only consistent; it allows room for unexpected or emergency needs. |
| 0 2 2 2 $\vdots$ $\vdots$ | Your planning contains little or no structure. The travel plans fails to follow a logical sequence. You do not consider important aspects of the trip in your plan. Your recommendations for sightseeing and/or other activities are not appropriate for a family vacation. This trip will be a disappointment to both adults and children. | Your planning is structured. The travel plans follow a logical sequence. You provide sound advice for major aspects of the trip. Recommendations are appropriate, although they tend to favor either the adult OR child perspective. Overall; this trip will be a success. | Your planning is well structured and easy to follow. The travel plans are complete and logical. Your advice to the family is unique and inspired. Recommendations are highly appropriate for all family members, offering a good balance between activities that are likely to please adults and /or children. This trip will be the vacation of a lifetime! |
|  | Overall presentation is messy and hard to understand. Your map is not drawn to scale and does not include important elements. Travel routes are not clearly labeled and mileage is missing. Accompanying materials such as charts and/or graphs are illegible or not clearly related to itinerary. | Overall presentation is neat and easy to understand. Your map is drawn to scale and includes major elements. Travel routes are labeled, but hard to locate. Mileage is indicated, but in an inconsistent manner. Accompanying materials such as charts and/or graphs are easy to read and relate to the itinerary. | Overall presentation is neat and exciting. Your map is drawn to scale, and includes all appropriate elements. Travel routes are clearly labeled and mileage is indicated. Accompanying materials such as charts and/or graphs are professional looking and greatly enhance and/or explain the itinerary. |


|  | STILL <br> IN TRAINING | TRAVEL AGENT | WORLD CLASS PLANNER |
| :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { y } \\ & \underline{2} \\ & \text { S } \\ & \mathbf{S} \\ & \mathbf{U} \end{aligned}$ | Information is haphazardly organized. Sentences are not supported by details. Word usage is repetitive, rather than varied. Errors in spelling, punctuation and grammar make itinerary difficult to read. | Information is organized. Sentences are supported by details and use a variety of words and phrases. Minor errors in spelling, punctuation and grammar do not interfere with the message. | Information is clearly and succinctly organized. Each sentence is supported by rich and coherent relevant details. Sentences are highly descriptive and make use of a wide variety of words and phrases. Spelling, punctuation and grammar are correct. |


|  | N/A |  | You include with your itinerary an itemized estimate of additional costs that the family migh incur on this vacation. | You include with your tinerary both an itemized estimate and a detailed explanation of additional costs that the family might incur on this vacation. |
| :---: | :---: | :---: | :---: | :---: |

