THINKDOTS

Instructional Strategy for Differentiation

KNOW

Participant will use key principles of effective differentiation as related to ThinkDots.

UNDERSTAND

The practical applications and skills of ThinkDots as related strategies that support differentiated processing.

DO

Effectively create and implement ThinkDots activities.

WHY WOULD YOU USE THINKDOTS?

- ❖ To engage your students in idea and information processing activities.
- ❖ To match your students learning profiles and current needs.
- ❖ To engage your students forward on many learning continuums.
- ❖ To identify the students readiness levels, interests, learning styles.
- ❖ To use an ongoing assessment process.

WHEN WOULD YOU USE THINKDOTS?

After a unit has been presented and students are familiar with the elements of the unit and conceptual skills, ThinkDots is an activity to help students to Think about and make sense of the unit and concepts they are studying.

The teacher first defines readiness levels, interests and learning styles in the class, using on-going assessment. Decide what you want your students to know, understand, and do.

STUDENTS USE THINKDOTs

ThinkDots:

❖ Students begin ThinkDots by sitting with other students using activity cards of the same color.

❖ Students roll the die and complete the activity on the card that corresponds to the dots thrown on the die.

❖ If the first roll is an activity that the student does not want to do a second roll is allowed.

❖ Teachers can create an Activity Sheet to correspond to the lesson for easy recording and management.

ThinkDots:
Grade 2 Math

❖ What students should know:
  - Count by fives
  - Count up to Sixty
  - Tell time to the half hour
  - 4 quarters is equals $1.00
  - 3 fives make fifteen
  - There is quarter after and a quarter till
  - Clock is divided into 4 parts and is similar to 4   quarters equaling $1.00.
❖ What Students should understand:
  - Time helps people plan their lives better.
  - Time helps people communicate.
❖ What students should be able to do
  - Tell time to the quarter hour.

How Many fives are in the Number 60?

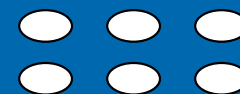If it is 5:15, how many minutes after 5 is it?

How many minutes are in quarter after 2:00?

Soccer practice begins at 6:00 PM. Draw what the clock face would look like if soccer practice ends in one hour and fifteen minutes.

How many minutes go by between 2:00 and a quarter till 3:00?

Create an interesting word problem using the times 4:00 PM and 5:15 PM.

ThinkDots
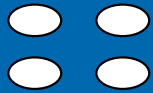**Title: Grade 2 Math Level 1**

Explain the similarities between quarter till and quarter after.

It is 4:15 PM and dinner starts at 6:00 PM. How many minutes until dinner?

Explain the difference between 5:15 and 5:45.

It's 3:15 in Egypt. What do you think the people of Egypt are doing?

Create a word problem using the times 9:00 PM and 7:00 AM.

Explain the difference between 12:00 AM and 12:00 PM.

ThinkDots

Title: Grade 2 Math Level 2

a, b, c and d each represent a different value.
If a = 2, find b, c, and d.

a + b = c

a - c = d

a + b = 5

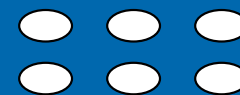Explain the mathematical reasoning involved in solving card 1.

Explain in words what the equation 2x + 4 = 10 means. Solve the problem.

Create an interesting word problem that is modeled by:
8x – 2 = 7x.

Diagram how to solve
2x = 8.

Explain what changing the " 3 " in 3x = 9 to a "2" does to the value of x. Why is this true?

ThinkDots

Title: Algebra   level 1

a, b, c and d each represent a different value.
If a = 1, find b, c, and d.

a + b = c

b - b = d

c + a = -a

Explain the mathematical reasoning involved in solving
card 1.

Explain how a variable is used to solve word problems.

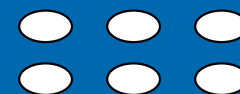Create an interesting word problem that is modeled by
2x + 4 = 4x - 10.
Solve the problem.

Diagram how to solve
3x + 1 = 10.

Explain why
x = 4 in 2x = 8,
but x = 16 in ½ x = 8.
Why does this make sense?

ThinkDots
Title: Algebra   level 2

a, b, c and d each represent a different value.
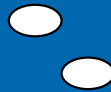If a = 4, find b, c, and d.

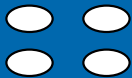$a + c = b$

$b - a = c$

$cd = -d$

$d + d = a$

Explain the mathematical reasoning involved in solving card 1.

Explain how a variable in mathematics is used. Give examples.

Create an interesting word problem that is modeled by $3x - 1 < 5x + 7$.

Solve the problem.

Diagram how to solve $3x + 4 = x + 12$.

Given $ax = 15$, explain how x is changes if a is large or a is small in value.

ThinkDots

Title: Algebra   level 3

LET'S TRY IT

❖ Create a K.U.D. from the lesson provided.

❖ Create a ThinkDot activity that would be used to differentiate the lesson's learning outcome(s).

DIRECTIONS FOR THINKDOTS

➢ **First Steps:**

-Develop KUD

-For each readiness level, write six activities on the pre-printed ThinkDots template should be created.

- Use your 6 levels of Bloom intelligence levels or any of the ThinkDots statements to write a activity for each card.

- Make the questions that use these levels that probe the specifics of your unit.

- Keep one question opinion based—no right or wrong.

➢ **Second Steps:**

- Then cut each page into the six sections.

- On the back of each card, dots corresponding to the dots on the faces of a die should be drawn on each of the six sections of the page.

- Use the hole punch to make holes in one corner or in the top of each activity card.

- Use a 1" metal ring to hold each set of six cards together.

- Teacher may create an Activity Sheet to correspond to the lesson for easy recording and management.

THINKDOTS

Suggestions:

❖   Use colored paper to indicate different readiness levels, interests or learning styles.

❖   Have students work in small groups.

❖   Let students choose which activities- for example: choose any three or have students choose just one to work on over a number of days.

❖   After students have worked on activities individually, have them come together in groups by levels, interest or learning style to synthesize.

Reflection

❖ Explain your understanding of the skills involved in creating ThinkDots activities.

❖ How did the activities lead you into a deeper need for exploration of the ThinkDots?

Next Steps

What is your next step in terms of ThinkDots?

Think Dots
Action Plan Worksheet

After attending training such as this, you are more likely to implement the ideas you have learned if you make specific plans for follow-up.
Prepare an action plan to implement Think Dots.

Goal:
Implement Think Dots as a strategy to support differentiation

What do you need to do?	Who's Responsible	Completion Time	Comment