INSTRUCTIONAL LEADERSHIP programme

Concept Attainment

Fractions - Common Denominator

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There is something about the two problems below that have the same 'issue'.

If you don't solve the 'issue'…well…you can't solve the problem. Keep your ideas to yourself.

1. **Three pears plus two apples =**
2. **1/3 plus 3/4 =**

So, let's solve the 'issue'

Information

1. **Just look at the A Side and B Side**
2. **You may want to look at all the A Side examples first, then the B Side…or vice versa**
3. **Or, you may want to go back and forth…up to you.**
4. **Just keep your thoughts to yourself until asked to share.**

Note: this approach to Concept Attainment is know as 'Simultaneous Scanning'…you look at all the examples all at once.

Specific Directions

1. Focus on the idea of ‘both sides’ having to make ‘one’ change…different, yet the same.
2. Compare the A Side examples and contrast them with the B Side examples
3. The A Side examples represent one aspect of a concept; the B Side examples represent another aspect. Keep your ideas to yourself until asked to share.
4. You will also get ‘testers’ to check to see if you understand. Then you will solve a few problems with a partner, and then on your own.

How are the A side examples the same? how are they different from the B Side?How are the B Side examples the same?

SIDE A	SIDE B
1. Necklace	1. Planets
2. Banana	2. Vehicles
3. Chair	3. Weather
4. Horse	4. Clothing
5. Measles	5. Plants
6. Fork or spoon	6. Provinces
7. Calgary	7. Art
8. Nickel or dime or dollar	8. Meat

Check for Understanding-Snowball

- **Think to yourself, you've seen the A and B Side…How are the A Side words different from the B Side words?**
- Write your hypothesis or idea on your sheet of paper and when signaled, 'Snowball' your ideas. If not sure, just put a question mark **'?'**
- Now read the one you picked up and check to see if others in the class think like you; be prepared to read your snowball to the class and to share your thinking.
- Now take about 30 seconds to pull your thinking together and I'll randomly call on three of you to share; Murphy's Law states I will pick you…so be ready.
- Try the testers on the next slide…all A Side, all B Side or perhaps they do not fit on either side.

Testers

A Side or B Side

1. Dishes
2. Machine
3. Hockey stick
4. Sports
5. Spider
6. Mammals
7. Triangle
8. 14

Tester...Which one is **A Side?**

Which one **B Side**

??????

???????

Have you figured it out?

What is the common 'issue' in these two problems. Be ready to answer when I call on you. You have ten seconds to think what you will say. If not sure, just say "Pass".

1. **Three pears plus two apples =**
2. **1/3 plus 3/4 =**

What is the common 'issue' in those two problems?

The common issue???

- You need a word that both pear and apple will go into…in this case…fruit, but you could say ‘plants’ or ‘living things’…but fruit is more precise because ‘carrot’ is a plant and a dog is a living thing.
- You need a number that both 3 and 4 (the denominators) will go into with no remainder…in this case 12, but you could have said ‘24’ or 36, but 12 is more precise. The smaller the common denominator…the easier it is to solve.

Perkins 4 Questions
Common Denominator(CD)

What is the (or are the)?

1. **Structure:** a number that the denominator of two proper fractions being added or subtracted will fit into equally.
2. **Purpose**: to facilitate the adding or subtracting of two proper fractions
3. **Model Cases:** 1/2 +1/3 … CD = 6, 2/5+3/4…CD=20
4. **Value:** solve problems involving adding fractions with unlike denominators.