Lesson Plan Template

# Breakthrough Denver

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| **Getting Yourself Ready** | | | | |
| **Materials**: | | **Your Preparation**:  Worksheets giving examples of rate related labs | | **Agenda (w/times)**:  Do Now(5-10mins)  Teaching(10-15)  Practice(10-15)  Science Game(10) |
| **Getting Your Students Ready** | | | | |
| \***Do Now**:  Go over homework and see what questions students had at home about the lab | | | | |
| **Objective**: Today you will be able to begin relating r= d/∆t to the idea of independent | | | **Proving behavior**: Exit Slip with rate problems where students have to state the independent variable. | |
| **Purpose**: We are doing this because knowing independent variables is a skill that student s will need throughout scientific career. | | | | |
| **Teaching** | | | | |
| Step 1: Review r=d/∆t | Say: Remember the equation that we have been working on this week r=d/∆t. What does each part of the equation mean?  See: Have equation written up on the board  \*Do: Have the students answer the question. Pick randomly on the students and have other students explain the correct answer if any answers weren’t quite right and have the student who was misunderstood repeat the correct answer and why its right | | | |
| Step 2:Have them think out the process of the independent variable and how it relates to the lab | Say: We have the equation down right? Well now I’m going to introduce a new concept to you. I want you to think about our lab yesterday. In each experiment what was the part that was being changed? (look for answers like string length, time)  See: See a set-up of one of the stations from the lab the day before so they can see it and remember/explain better-🡪 write up their answers on the board  \*Do: Have students explain how we changed each. With example walk them through explaining themselves what an independent variable is. | | | |
| Step 3: Introduce independent variables | Say: Tell them that what they are looking at is the independent variable and give them the definition of what it is.  See: see the definition on the science word wall  \*Do: repeat the definition in a chorus response | | | |
| Step 4: Practice independent variable | Say: Now were going to go back to some of our past examples and identify the independent variables of all of them  See:  \*Do: | | | |
| Step 5: | Say:  See:  \*Do: | | | |
| Step 6: | Say:  See:  \*Do: | | | |
| **Practice** | | | | |
| \***Structured Practice** (3-4 additional examples led by teacher with gradually quickening pace, helping students approach automaticity by manipulating time, materials, and group size) | | | | |
| Time: 5mins  Materials: Lab data  Group Size: whole class | Example 1  Using the lab as an example, have the students find the independent variable | | | |
| Time: 10  Materials: worksheet  Group Size: 1-2 | Example 2  Have students manipulate the independent variable in another experiment related to rate in order for them to understand how it works | | | |
| Time:  Materials:  Group Size: | Example 3 | | | |
| Time:  Materials:  Group Size: | Example 4 | | | |
| \***Guided Practice** (the proving behavior of the objective monitored by the teacher) | | | | |
| Assignment: (from proving behavior)  Exit Slip with rate problems where students have to state the independent variable. | | | Criteria for Mastery: | |
| Independent Practice (Homework) | | | | |
| Explain Homework: | | | | |
| **Closure** | | | | |
| Explain Closure: | | | | |

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| **VIP** | | |
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