# Mr. Singh's Application Lesson on Integers

## ESTABLISHING PURPOSE

**1** **What are the key content standards I will focus on in this lesson?**

Content Standards (2016 Virginia SOLs):

Virginia Standard of Learning 6.6

The student will

a. add, subtract, multiply, and divide integers; and

b. solve practical problems involving operations with integers; and

c. simplify numerical expressions involving integers.

Mathematical Process Goal for Students:

- Mathematical problem solving

**2** **What are the learning intentions (the goal and *why* of learning, stated in student-friendly language) I will focus on in this lesson?**

*Content:* I am learning to use my understanding of integer addition and subtraction to solve problems about temperature comparisons or changes.

*Language:* I am learning to explain my problem-solving approach verbally and in writing.

*Social:* I am learning to explain my problem-solving thinking clearly to my peers.

**3** **When will I introduce and reinforce the learning intention(s) so that students understand it, see the relevance, connect it to previous learning, and can clearly communicate it themselves?**

I will introduce the lesson by providing an example of temperature change during travel. In Virginia's January winter, the temperature is quite cold. If I travel to Australia's January summer, the temperature is warmer. I can use integers to show this change with an equation. I will then share the learning intentions and success criteria for the day and provide a worked example for the task at hand.

## SUCCESS CRITERIA

**4** **What evidence shows that students have mastered the learning intention(s)? What criteria will I use?**

I can statements:

- I can find and explain temperature relationships among the cities in the task.
- I can compute missing values accurately.
- I can explain the process used to figure out missing values.

**5** **How will I check students' understanding (assess learning) during instruction and make accommodations?**

While observing student pair progress through the task, I will pay close attention to the strategy they use to find the temperature in the corresponding city.

As learners engage in conversation and work on the task, I will ask probing questions to push their thinking forward.

## INSTRUCTION

**6** **What activities and tasks will move students forward in their learning?**

This will be a concept development lesson. I will pair learners based on preassessment data from the previous day. In their pairs, students will engage in a series of problems that require them to find the temperature of a city based on how much the temperature differs from another city.

**7** **What resources (materials and sentence frames) are needed?**

Preassessment

1. Activity cards
2. Thermometer strips

Postassessment/exit ticket

1. Poster paper and glue sticks for recording the final network

**8** **How will I organize and facilitate the learning? What questions will I ask? How will I initiate closure?**

1. Lesson Introduction

   I will introduce the lesson by providing an example of temperature change during travel. In Virginia's January winter, the temperature is quite cold. If I travel to Australia's January summer, the temperature is warmer. I can use integers to show this change with an equation. I will then share the learning intentions and success criteria for the day and provide a worked example for the task at hand.

2. Student Partner Work

   Students work in pairs based on preassessment performance. As learners engage in conversation and work on the task, I will ask probing questions to push their thinking forward. Student pairs will build a poster of their temperature relationship network as they identify the relationships and missing values using their knowledge of integer addition and subtraction.

3. Lesson Closure

   Near the end of the lesson, students will swap one partner with another team nearby to ask questions about their work. Then the students will bring this thinking back to their own team to continue refining their work.

   At the end of class, I will have students model their current thinking about sample problems in another whole-class discussion. The lesson ends with a brief postassessment.