

# USING PRIOR KNOWLEDGE TO INCREASE KINDERGARTEN STUDENTS' SCIENCE

## COMPREHENSION

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### Research Focus Statement:

The purpose of this study was to determine the best way to access background knowledge as an instructional practice with the intention of increasing student comprehension.

### Kindergarten Class:

I teach kindergarten at Hellgate Elementary, a K-8 school in Missoula, Montana. Hellgate Elementary is a designated Title One public school district that is separate from the Missoula County Public School District. Hellgate Elementary has 1,306 students, with eight classrooms assigned to kindergarten. I have 20 students in my classroom, ten male and ten female. Kindergarten is an all day program, with the students ranging in age from five to six years old. Some of these students have had previous school or childcare experiences and some come to my class with no school experience thus far. As a result, my classroom has a large spectrum of academic abilities.

### Literature Review:

"Prior knowledge is the key to solid comprehension" (Koldewyn, 1998, p. 12).

"A single association of prior knowledge may have as many as 10,000 connections" (Jensen, 2005, p. 46).

"Comprehension instruction in schools, beginning in kindergarten, is therefore crucial" (Pardo, 2004, p. 278).

"Research indicates that prior knowledge, positive or negative, has a strong influence on the students' achievement in class" (Miller, 2006, p. 8).

### Methodology:

The treatment for this study was to incorporate four Background Knowledge Probes as Classroom Assessment Techniques (CATs) from Angelo and Cross (1993). These various CATs served as tools that allowed me to check for background knowledge at the beginning of each of our science units during the third quarter. Throughout the science units, I tracked the students' levels of understanding and misconceptions. At the end of each science unit, I reevaluated and recorded what the students had learned during each unit.

### Data collection strategies:

- Teacher Interviews
- Student Interviews
- Background Knowledge Probes
- Teacher's Field Notes



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**Results and Conclusions:** Data collected provided evidence that these probes do make a difference in strengthening the students' comprehension. These probes gave an appropriate starting point to begin a lesson on a science topic based on what students already knew. They also helped students develop a connection to the new information that was being presented. The probes showed my students' interests, so I was able to develop a rich learning environment by answering the questions that the students had. As a result, my students were involved and excited about learning, and therefore their learning was strengthened. Fewer misconceptions were formed, while others were corrected rather than continued.