

# Changing Student Misconceptions About Science

## Introduction

Four year supported by Massachusetts Board of Higher Education (ITQ)

A Professional Development Model to Identify and Change Science Misconceptions

## Our Goals

Train prospective and veteran teachers to identify student misconceptions

Develop strategies to change misconceptions

Evaluate success; research if it works

## Our Partners

Springfield Science Museum, Springfield Schools

## The Mitten problem (case study)

Predict what fourth grader might select and say

Video example (2 min) - Elicit part (student responses)

Share and compare quantitative and qualitative aggregate data.

## What strategies would you choose to change misconception?

Video example (2:19 min) - Engage and explore parts (let's test it ourselves)

## Was the strategy successful?

Share data from quantitative post and post-post tests

Video example (4 min)- - Evaluate part (student responses)

Share qualitative data (3 response types)

## Professional Development Annual cycle

Probe teachers' students understanding of sciences; identify misconceptions

Year 1- Earth Sciences Year 2- Physical science s Year 3- Life sciences

One week professional development (models)

Results from self efficacy

Teachers implement with their classes

Call back- share results from pre and post probes

## The Challenges

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