STEM TEACHER ACTIONS



Creating An Environment for Learning

Creating a Positive Classroom Culture Action 1

- + The Physical Space: Safe and Accessible Indicator 1
- + The Physical Space: Student Interactions Indicator 2
- + Classroom Routines & Procedures Indicator 3
- + Student-Teacher Interactions Indicator 4
- + Academic Focus Indicator 5
- + Response to Failure & Intellectual Risk Taking Indicator 6

Establishing Cooperative Learning Action 2

- + Student-Student Interactions Indicator 7
- + Student Interdependence Indicator 8
- + Collaboration & Conflict Resolution Indicator 9

Integrating Technology Action 3

- + Technology Integration Indicator 10
- + Enhancement of Learning with Technology Indicator 11

Connecting Learning Outside the Classroom Action 4

+ Real-World Connections Indicator 12

Building Scientific Understanding

Implementing Inquiry Action 5

- + Student Contribution Indicator 13
- + Lesson Sequence Indicator 14

Addressing Student Misconceptions Action 6

- + Probing for Misconceptions Indicator 15
- + Resolving Misconceptions Indicator 16

Facilitating Questioning & Discourse Action 7

- + Processing Time Provided Indicator 17
- + Levels of Cognition Indicator 18
- + Equity of Responses Indicator 19
- + Follow-Up to Student Responses *Indicator 20*

Utilizing Assessment Action 8

- + Checking for Understanding Indicator 21
- + Utilizing Formative Assessment Data Indicator 22

Building Scientific Literacy Action 9

- + Reading in Science Indicator 23
- + Writing in Science Indicator 24
- + Conceptual Understand & Vocabulary Development Indicator 25
- + Nonlinguistic Representations Indicator 26
- + Presentation of Ideas & Listening to Others Indicator 27

Engaging Students in Scientific and Engineering Practices

Cultivating Scientific Investigations Action 10

- + Investigable Questions Indicator 28
- + Investigative Design Indicator 29

Developing Engineering Solutions Action 11

- + Identifying Engineering Problems Indicator 30
- + Engineering Design Process Indicator 31

Fostering Data Utilization Action 12

- + Organizing and Presenting Data Indicator 32
- + Interpreting Data Indicator 33

Implementing Project Based Learning (PBL) Action 13

- + Authenticity of Driving Question Indicator 34
- + Student Autonomy Indicator 35

Developing Scientific Explanations Action 14

- + Development of Explanation Indicator 36
- + Support of Explanation Indicator 37

Facilitating Scientific Explanations Action 15

+ Analysis & Critique of Explanations Indicator 38

