CESL
Collaborative for Early Science Learning

# Connecting science process skills to Head Start standards

*Support Head Start assessments by focusing on process skills*

| Science Process Skill | COR (Child Observation Record) Assessment Items | Teaching Strategies Gold Assessment Items | CLASS Indicators | Early Learning Outcomes Framework Domain: Sub-Domain: Goal |
|---|---|---|---|---|
| **Observing** | Observing and Classifying<br>Natural and physical world<br>Patterns | Shows curiosity and motivation<br>Uses scientific inquiry skills<br>Attends and engages<br>Recognizes and recalls | Connects Concepts<br>Integrates with previous knowledge<br>Real world applications<br>Related to students real lives<br>Active participation<br>Focused attention<br>Follows students lead | Approaches to Learning: Initiative and Curiosity: Goal P-ATL 11; Goal IT-ATL 7<br>Approaches to Learning: C<br>ognitive Self-Regulation: Goal IT-ATL 3; Goal P ATL 5<br>Cognition: Exploration and Discovery: Goal IT-C 1<br>Cognition: Imitation and Symbolic Representation and Play: Goal IT-C 11<br>Scientific Reasoning: Scientific Inquiry: Goal P-SCI 1 |
| **Predicting** | Experimenting, predicting and drawing conclusions | Uses scientific inquiry skills<br>Shows curiosity and motivation<br>Shows flexibility and inventiveness in thinking | Prediction/Experimentation<br>Brainstorming | Cognition: Exploration and Discovery: Goal IT-C 1; Goal IT-C 2<br>Scientific Reasoning: Reasoning and Problem Solving: Goal P-SCI 4; |
| **Measuring** | Measurement<br>Tools and technology | Uses scientific inquiry skills<br>Compares and measures<br>Uses tools and other technology to perform tasks | Active Participation<br>Focused attention | Mathematics Development: Measurement: Goal P-MATH 8 |
| **Experimenting** | Experimenting, predicting, and drawing conclusions<br>Data Analysis | Uses scientific inquiry skills<br>Shows flexibility and inventiveness in thinking | Evaluation<br>Prediction/experimentation | Cognition: Exploration and Discovery: Goal IT-C 1; Goal IT-C 2<br>Scientific Reasoning: Reasoning and Problem Solving: Goal P-SCI 5 |
| **Problem Solving** | Problem solving with materials<br>Conflict Resolution | Uses scientific inquiry skills<br>Attends and engages<br>Solves problems<br>Persists | Problem Solving<br>How and Why Questions<br>Integrates with Previous Knowledge<br>Hints<br>Assistance<br>Focused attention | Approaches to Learning: Cognitive Self-Regulation: Goal IT-ATL 3; Goal P ATL 5<br>Cognition: Reasoning and Problem Solving: Goal IT-C 6; Goal IT-C 7 |
| **Using Tools** | Measurement<br>Problem Solving with Materials<br>Tools and technology | Uses scientific inquiry skills<br>Uses tools and other technology to perform tasks | Range of auditory, visual, and movement activities<br>Hands on opportunities<br>Focused attention | Cognition: Reasoning and Problem Solving: Goal IT-C 6; Goal IT-C 7<br>Scientific Reasoning: Reasoning and Problem Solving: Goal P-SCI 4; Goal P-SCI 5; Goal P-SCI 6 |
| **Communication** | Speaking<br>Listening and Comprehension<br>Reflection | Uses an expanding expressive vocabulary<br>Speaks clearly<br>Follows directions<br>Tells about another time or place | Peer Conversations<br>Contingent responding<br>Back and forth exchanges<br>Encourages student talk<br>Elicits ideas and/or perspectives<br>Specific Feedback<br>Variety of words | Language and Communication: Attending and Understanding: Goal IT-LC 1; Goal IT-LC 2; Goal P-LC 1; Goal P-LC 2<br>Language and Communication: Communication and Speaking: Goal IT-LC 1; Goal IT-LC 2; Goal IT-LC 4; Goal IT-LC 5; Goal IT-LC 6; Goal P-LC 3; Goal P-LC 4; Goal P-LC5<br>Language and Communication: Vocabulary: Goal IT-LC 7; Goal IT-LC 8; Goal P-LC 6; Goal P-LC 7<br>Scientific Reasoning: Scientific Inquiry: Goal P-SCI 1; Goal P-SCI 2<br>Scientific Reasoning: Reasoning and Problem Solving: Goal P-SCI |

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|---|---|---|---|---|
| **Asking Questions** | Listening and comprehension<br>Speaking | Uses scientific inquiry skills<br>Speaks clearly<br>Comprehends language<br>Shows curiosity and motivation | Open-ended questions<br>Follow-up questions<br>Persistence by teacher<br>How and why questions<br>Effective questioning | Language and Communication: Communication and Speaking: Goal IT-LC 5; Goal IT-LC 6; Goal P-LC 4;<br>Literacy: Comprehension and Text Structure: Goal P-LIT 5<br>Scientific Reasoning: Reasoning and Problem Solving: Goal P-SCI 4 |
| **Categorizing** | Knowledge of self and others<br>Observing and Classifying<br>Patterns | Uses classification skills<br>Demonstrates knowledge of patterns<br>Demonstrates knowledge of physical properties of objects and materials<br>Demonstrates knowledge of the characteristics of living things<br>Demonstrates knowledge of the Earth's environment | Classification/comparison<br>Evaluation<br>Focused attention<br>Interesting and creative materials | Mathematics Development: Operations and Algebraic Thinking: Goal P-MATH 7<br>Mathematics Development: Geometry and Spatial Sense: Goal P-MATH 9<br>Scientific Reasoning: Scientific Inquiry: Goal P-SCI 3<br>Scientific Reasoning: Reasoning and Problem Solving: Goal P-SCI 6 |
| **Cause and Effect** | Natural and Physical World<br>Experimenting, predicting, and drawing conclusions | Uses scientific inquiry skills<br>Demonstrates knowledge of physical properties of objects and materials<br>Demonstrates knowledge of the characteristics of living things<br>Makes connections<br>Explores change related to familiar people or places | Evaluation<br>Experimenting<br>How and Why Questions<br>Focused attention | Cognition: Exploration and Discovery: Goal IT-C 1; Goal IT-C 2<br>Scientific Reasoning: Reasoning and Problem Solving: Goal P-SCI 6 |

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