THE NATIONAL CENTER ON
Quality Teaching and Learning

PRESENTER NOTES
FOSTERING CHILDREN'S THINKING SKILLS

This guide walks you through presenting ***Engaging Interactions: Fostering Children's Thinking Skills.*** This in-service suite includes PowerPoint slides and supporting materials.

MATERIALS NEEDED:

- Presenter PowerPoint slides (16)
- Projector and audio equipment
- Learning Activities:
  - » *Video Review of Blubber Experiment*
  - » *Video Review of Fox Tail*
- Optional Learning Activities:
  - » *Discussion of Classroom Scenarios*
  - » *Planning in Your Classroom*
- Tips for Teachers
- Tools for Supervisors
- Helpful Resources List
- Flip chart or similar large paper and markers for writing participant ideas.

BEFORE YOU BEGIN:

- The purpose of this presentation is to share strategies teachers can use to support children's understanding and deepen their knowledge of their surroundings.
- This is one in a series of in-service suites on *Engaging Interactions.*
- Three main strategies are described: using the scientific method, problem solving, and applying knowledge.
- The presentation includes video clips and examples that illustrate examples of interactions where teachers foster children's thinking skills.
- As necessary, remind participants that anywhere examples and nonexamples are used (e.g., *Tips for Teachers*) they are specific to the concept being discussed. The nonexamples may be appropriate behaviors in other circumstances.
- Learning activities offer participants opportunities to discuss examples and practice applying the strategies.
- Optional learning activities are described in detail at the end of this document, after the closing slide.

NOTE

The Supervisor Planning Guide located in the *Tools for Supervisors* is an overarching tool that applies to multiple in-service suites in the *Engaging Interactions* series.

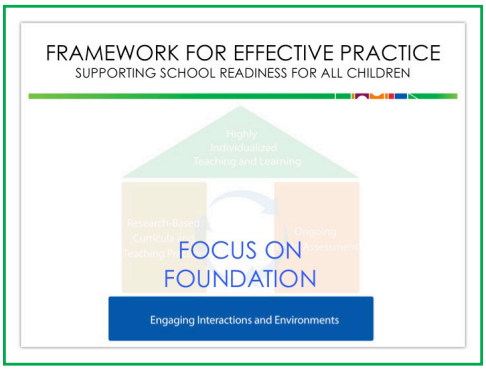
SLIDE 1:
FOSTERING CHILDREN'S THINKING SKILLS

Introductions:

- Begin the training by giving participants background information on yourself.
- Provide an opportunity for participants to introduce themselves (e.g., where they are working, their current role, etc).

Introduce topic:

- *Fostering Children's Thinking Skills* focuses on strategies teachers can use to support children's learning and development.



EMPHASIZE *

Research shows that interactions are the classroom processes that promote children's social and academic development.

SLIDE 2:
FRAMEWORK FOR EFFECTIVE PRACTICE

Introduce the NCQTL Framework for Effective Practice.

- The House structure supports school readiness for all children.
- The foundation represents effective and engaging interactions and environments.
- The pillars represent research-based curricula and teaching practices and ongoing child assessment.
- The roof represents highly individualized teaching and learning.
- All components interact with each other and are essential for effective everyday practice with all children.
- This presentation fits into the *foundation* of the House:

Relevance of the NCQTL Framework to participants' everyday work.

- Provides the Head Start community with a visual framework for effective teaching practice in classrooms.
- Guides thinking about all the practices that support school readiness.
- Organizes training and professional development.

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SLIDE 2 CONTINUED FROM PREVIOUS PAGE

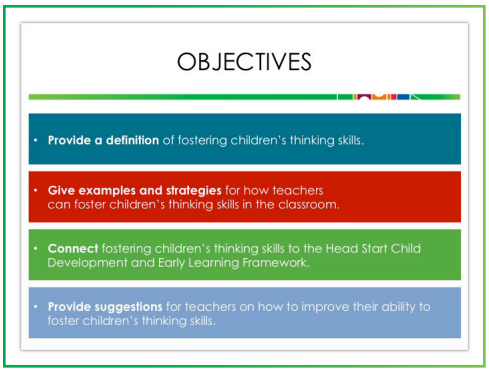
Introduce *Engaging Interactions*.

- Interactions are the classroom processes that promote children's social and academic development.
- When teachers create positive emotional relationships, organize the learning environment, and focus on cognitive and language development, children make greater gains that help them succeed in school and life.

There are three broad blocks to the foundation: Social and Emotional Support, Well-Organized Classroom, and Instructional Interactions. The *Engaging Interactions* series fits in the Instructional Interactions block. Specifically *Fostering Children's Thinking*, is one kind of classroom interaction that supports children's later success in school.

NOTE

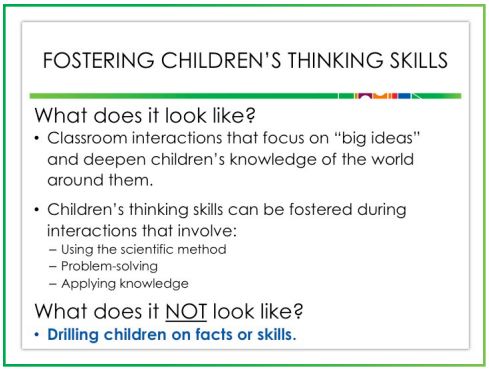
Classroom processes refer to the way teachers interact with children as well as to how they select and use materials and resources for instructional purposes.



SLIDE 3: OBJECTIVES

Outline the objectives for presentation:

- Provide a definition of fostering children's thinking skills.
- Give examples and strategies for how teachers can foster children's thinking skills in the classroom.
- Connect fostering children's thinking skills to the Head Start Child Development and Early Learning Framework.
- Provide suggestions for teachers on how to improve their ability to foster children's thinking skills.



SLIDE 4:
FOSTERING CHILDREN'S THINKING SKILLS

Teachers can create classroom environments where children feel safe to explore and experiment and are encouraged to express their thoughts and ideas.

Classroom interactions that support children's thinking focus on "big ideas" and deepen children's knowledge of their surroundings.

Teachers help children become aware of their own thought processes and encourage children to think in new and different ways.

- This in-service suite describes three main strategies teachers can use to foster children's thinking: using the scientific method, problem solving, and applying knowledge.
- Fostering children's thinking is NOT about rote instruction.

NOTE

"Big ideas" emphasize key concepts that are important for children to learn. Preschool teachers focus on "big ideas" by identifying meaningful learning goals for children that contribute to school readiness. They teach "big ideas" by explicitly linking new concepts to what children already know and providing multiple opportunities for practice.

SLIDE 5:
FOSTERING CHILDREN'S THINKING SKILLS BY **USING THE SCIENTIFIC METHOD**

Scientific method refers to a set of procedures for acquiring new knowledge. It involves asking questions, making observations, predicting, experimenting, and discussing connections between new and previous knowledge.

Teachers can use the scientific method to foster children's thinking skills by:

- **Encouraging** children to *ask questions* and *express* their ideas and thoughts;
- **Providing** tasks where children can *observe, predict*, and *experiment*.
- **Helping** children *discuss* results and how they relate to what children already know.

Example:

Back from outdoor play, a group of children talk about some worms they had seen on the playground. A child asks a *question* about what worms eat. The teacher might decide to modify a lesson she had planned on animal habitats and the ecosystem to focus on studying worms. She might ask children to carefully *observe* a worm, using a hand lens to notice different parts of the worm. She might ask children to *predict* what would happen when they place a leaf in an aquarium with a worm. Then she might ask a child to *experiment* by placing the leaf into the aquarium, and then making sure children check the next day to see and *discuss* what they notice about the worm and the leaf.

NOTE

For this presentation, the main emphasis is on three steps of the scientific method: observe, predict and experiment. Make sure participants understand the terms.

Glossary of terms:

- *Observe* – watch something carefully.
- *Predict* – an educated guess about what will happen in the future.
- *Experiment* – test something to see whether a prediction is correct.

For detailed information on implementing the five steps of the scientific method with children in the preschool classroom refer to the *Engaging Interactions: Using the Scientific Method* in-service suite included in the Engaging Interactions series.

SLIDE 6:
FOSTERING CHILDREN'S THINKING SKILLS BY **PROBLEM SOLVING**

Another strategy to foster children's thinking skills involves helping children to problem solve by:

- Providing opportunities for children to *brainstorm, plan,* and *solve problems*.
- Teachers can help children think through a problem and identify multiple possible solutions by modeling problem solving steps or by asking questions that encourage children to brainstorm, make connections, and find solutions.

Example:

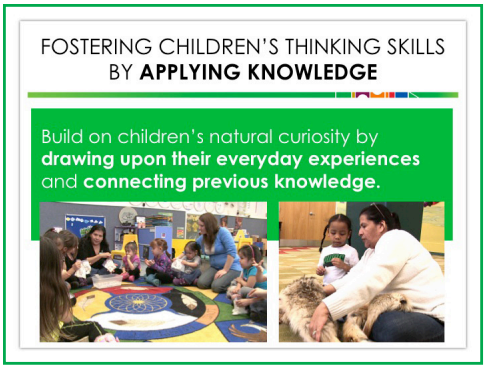
In an activity on recycling, the teacher reads a book about the importance of recycling, and then asks children to *brainstorm* about things in the classroom or at home that they typically throw in the trash, but that might be recycled instead. She asks each child to pick an object (e.g., cereal boxes, newspapers, scraps of paper from the art center) and asks them to think about an alternative way that object might be used (for example, produce containers could be used as organizing baskets in the classrooms).

NOTE

Make sure participants understand terms.

Glossary of terms:

- *Brainstorm* – create a list of ideas.



SLIDE 7:
FOSTERING CHILDREN'S THINKING SKILLS BY **APPLYING KNOWLEDGE**

Finally, another way to foster children's thinking skills is to help children apply new knowledge to what they already know:

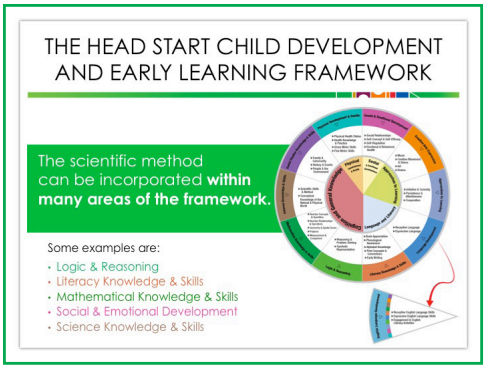
- The teacher can build upon children's natural curiosity by *drawing upon their everyday experiences* and *helping children connect new concepts to previous knowledge*.

Example:

In a lesson involving the five senses, the teacher brings in "mystery objects" with which the children are familiar (e.g., toothpaste, sliced orange, flowers, etc.). With the children sitting in a circle, she asks children to close their eyes, and guess what each object is that she passes around by using their sense of smell. In this lesson, the teacher has built upon children's curiosity and related their sense of smell to objects they smell in their everyday lives.

It is important that teachers carefully observe what is interesting to children. By building on what children are interested in and curious about, teachers support children's learning in a way that is relevant and meaningful to children's everyday experiences.

By integrating new information with what children already know teachers help children gain deeper understandings.

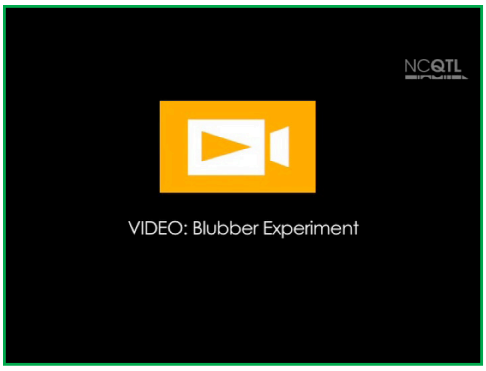


SLIDE 8:
HEAD START CHILD DEVELOPMENT AND EARLY LEARNING FRAMEWORK

Introduce NCQTL.

Fostering children's thinking skills can be connected to many domains of the Head Start Child Development and Early Learning Framework, including:

- Logic & Reasoning
- Literacy Knowledge & Skills
- Mathematical Knowledge & Skills
- Social & Emotional Development
- Science Knowledge & Skills



Length of video: Approximately 1 minute and 15 seconds

Video courtesy of the Cook Inlet Native Head Start

SLIDE 9:
VIDEO: BLUBBER EXPERIMENT

Introduce the video.

Inform participants this video shows a teacher talking with a child during a classroom experiment with blubber.

Ask participants to look for examples of how the teacher encourages children to predict and connect ideas.

VIDEO

NOTE

The next page contains supplemental materials for the video.

LEARNING ACTIVITY:
VIDEO REVIEW OF BLUBBER EXPERIMENT

The *Video Review of Blubber Experiment* learning activity can be used to discuss strategies for fostering children's thinking with the group. Refer to the *Video Review of Blubber Experiment: Facilitator Guide* for specific details.

NOTE

Depending on the number of participants, this activity can be done in the large group or participants can be divided into smaller groups of 3–4.

HANDOUT

Distribute the *Video Review of Blubber Experiment* handout to participants and review directions.

Participants list examples of observed strategies as they watch the *Blubber Experiment* video.

VIDEO

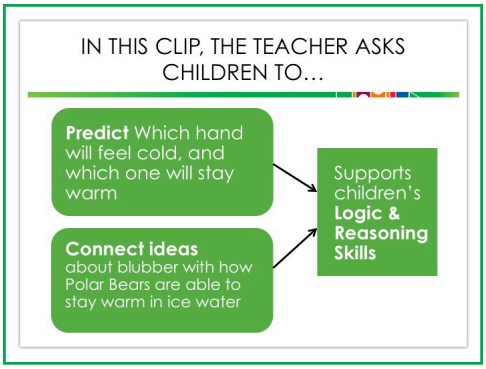
Inform participants they will review the video, look for, and write down specific examples of predicting and connecting ideas and other strategies used to foster children's thinking skills.

DISCUSSION

Strategies
Participants discuss examples of strategies they observed in the video directly in the large group or share back after discussion in the smaller groups.

DISCUSSION

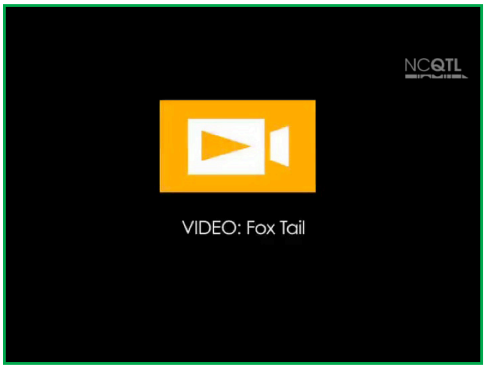
Connecting strategies to domains
Participants share examples of domain and domain elements from the Head Start Child Development and Early Learning Framework they observed being supported in the video. Participants discuss examples directly in the large group or share back after discussion in the smaller groups.



SLIDE 10:
IN THIS CLIP, THE TEACHER ASKS CHILDREN TO…

Highlight main points from the video clip related to fostering children's thinking skills:

- Remind participants that *predict* is a part of the *Using the Scientific Method* strategy and *connected ideas* is a part of the *Applying Knowledge* strategy.
- In this clip, there are many instances of the teacher engaging in instructionally supportive interactions with the children.
- For example: the teacher uses prediction by asking children if the hand with the blubber or without the blubber will get cold when put in ice water. She also connects ideas about blubber with Polar Bears and how they are able to stay warm while hunting for food in ice water. Both of these interactions support the development of children's logic and reasoning skills, particularly their ability to understand the world around them and acquire new knowledge.



Length of video: Approximately 1 minutes and 5 seconds

Video courtesy of the Cook Inlet Native Head Start

SLIDE 11:
VIDEO: FOX TAIL

Introduce the video.

Inform participants this video shows a teacher talking with children about a fox's tail and fur.

Ask participants to look for examples of how the teacher encourages children to brainstorm and connect concepts to their own lives.

VIDEO

NOTE

The next page contains supplemental materials for the video.

LEARNING ACTIVITY:
VIDEO REVIEW OF FOX TAIL

The *Video Review of Fox Tail* learning activity can be used to discuss strategies for fostering children's thinking with the group. Refer to the *Video Review of Fox Tail: Facilitator Guide* for specific details.

NOTE

Depending on the number of participants, this activity can be done in the large group or participants can be divided into smaller groups of 3–4.

Inform participants they will review the video, look for, and write down specific examples of brainstorming, connecting concepts to children's own lives, and other strategies used to foster children's thinking skills.

HANDOUT

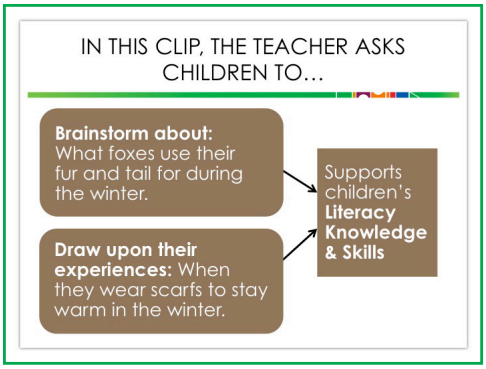
Distribute the *Video Review of Fox Tail* handout to participants and review directions.

Participants record examples of observed strategies as they watch the video.

DISCUSSION

Strategies
Participants discuss examples of strategies they observed in the video directly in the large group or share back after discussion in the smaller groups.

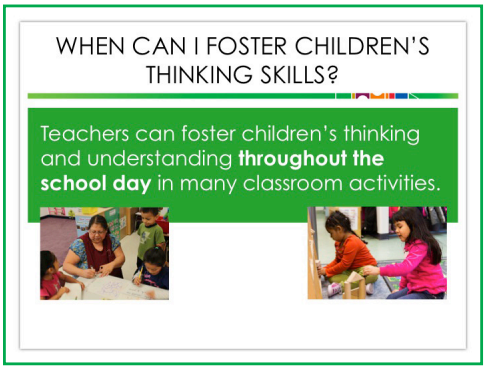
Connecting strategies to domains
Participants share examples of domain and domain elements from the Head Start Child Development and Early Learning Framework they observed being supported in the video. Participants discuss examples directly in the large group or share back after discussion in the smaller groups.



SLIDE 12:
IN THIS CLIP, THE TEACHER ASKS THE CHILDREN TO…

Highlight main points from the video clip related to fostering children's thinking skills:

- Remind participants that *brainstorm* is a part of the *Problem Solving* strategy and *draw upon experience* is a part of the *Applying Knowledge* strategy.
- In this clip, the teacher fosters children's thinking skills when she asks children to brainstorm about the uses of a fox's tail and fur by asking "what" questions. She asks, "What do you think he uses his tail for?" She also connects knowledge about the use of fur, to children's lives by asking children if they wear scarfs, and if they wrap it around their neck and face to keep warm. These interactions support the development of children's literacy knowledge and skills, particularly their understanding of the natural world around them.



SLIDE 13:
WHEN CAN I FOSTER CHILDREN'S THINKING SKILLS?

Children's thinking skills can be fostered throughout the day and across classroom activities and routines:

DISCUSSION

Ask participants to share examples.

Some possible examples:

Teachers can create experiments on how things move (e.g., things that slide and things that roll) that build on children's explorations during block construction activities.

Teachers can help children brainstorm and problem-solve when children role play familiar scripts (e.g., grocery store, going to the doctor) during dramatic play.

Teachers can introduce new print concepts and phonological awareness skills in the context of familiar stories and picture books.

SLIDE 14:
IMPROVING PRACTICE

Three ways to improve instructional interactions in the classroom:

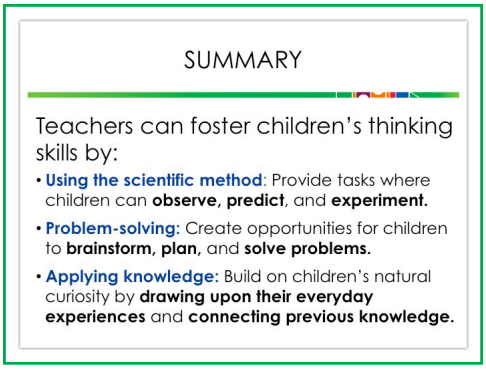
Videotape – Teachers can videotape and watch their classroom interactions. This can help them to observe moment-to-moment interactions with children and reflect on their practice.

> **Example:**
> A teacher videotapes her interactions with children during center time. In the block center, she asks a child, "How many blocks does this tower have?" The teacher notes that this is a good question, because it reinforces the counting skills that the children are learning. However, she realizes that she could have asked the child further questions that would have required more analysis and reasoning. She could have asked, "What do you think will happen if we add more blocks? Why do you think that?" Then she could have asked the children to add more blocks and talk about what happens. This would have allowed them to experiment and learn more from the activity.

Practice with a peer – It can also be helpful for teachers to "practice with a peer" by either having a peer teacher conduct a live classroom observation, or watch a video together of a teacher's practice. Fellow teachers can provide feedback on each other's behavior and children's cues and responses. Together, teachers can brainstorm ways that the focus teacher can interact in the classroom to make improvements and more often foster children's thinking skills.

> **Example:**
> When observing the focus teacher engaging in book reading, her peer teacher might notice that the teacher asks a lot of questions to the children, but uses mostly "closed-ended" questions that require one word responses, rather than asking questions that require children to analyze, reason, and make predictions. The peer teacher might suggest that the focus teacher try placing sticky notes on certain pages of a book with questions that require more complicated responses from the children, as a reminder to ask these types of questions.

Watch a "master teacher" – Another way to improve practice is to view examples of a more skilled teacher's interactions with children, either live or on video. Observing the master teacher's strategies can provide ideas for how to improve a teacher's own instructional interactions.



SLIDE 15:
SUMMARY

Review strategies to foster children's thinking skills:

Using the scientific method: Teachers encourage children to *ask questions*, provide tasks where children can *observe, predict,* and *experiment,* and help children *discuss* observations and relate findings to previous knowledge.

Problem solving: Creating opportunities for children to *brainstorm, plan,* and *solve problems.*

Applying knowledge: Building on children's natural curiosity and *drawing upon their everyday experiences* and *connecting previous knowledge.*

HANDOUT

Based on participant roles:

Distribute and review *Tips for Teachers* handout. This tip sheet provides multiple strategies that teachers can use, and examples of what these strategies look like in the classroom.

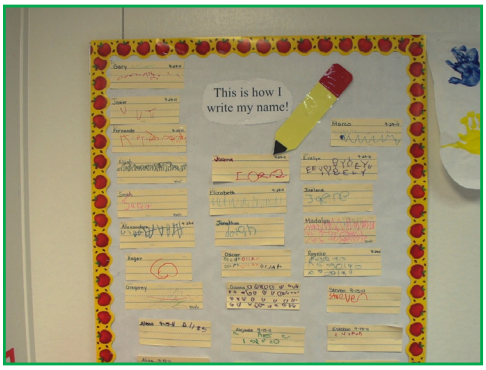
Please note that the strategies for "What this looks like in action" and "What it is not" are examples specific to those strategies. The behaviors in the nonexamples may be appropriate in other instances depending on children's learning goals.

Distribute and review *Tools for Supervisors: The Supervisor Planning Guide* provides strategies for coaches, mentors, or supervisors to use to help teachers enact change in their practice.

Distribute *Helpful Resources* list and review key resources, including links to websites, books, and articles that have information on fostering children's thinking skills.

SLIDE 16:
CLOSING

Provide participants with NCQTL contact information and encourage them to visit our website for additional resources.



OPTIONAL

LEARNING ACTIVITY: DISCUSSION OF CLASSROOM SCENARIOS

This learning activity provides an opportunity for participants to practice how they might use strategies to foster children's thinking skills.

This activity offers four options: identifying strategies, generating statements/questions, creating a script, and role play. The facilitator may use any number and combination of the four options.

Refer to the *Discussion of Classroom Scenarios: Facilitator Guide* for specific details.

NOTE

If you have a large group, consider dividing participants into smaller groups for this activity.

HANDOUT

Distribute the *Discussion of Classroom Scenarios* handout and review directions.

- Each group completes the assigned activities depending on the chosen option(s).

DISCUSSION

Have small groups share back with the larger group.

For the role play option:

Encourage participants to comment based on their assigned role of teacher, child, or observer.

Possible questions to ask:

- What did you notice the teacher doing?
- How did the children respond?
- What other ways could teachers implement this strategy?

OPTIONAL

LEARNING ACTIVITY: PLANNING IN YOUR CLASSROOM

This learning activity provides an opportunity for participants to develop a plan for how they might use these strategies in their own classrooms. This activity works best when there are multiple participants working in the same classroom or program. Refer to the *Planning in Your Classroom: Facilitator Guide* for specific details.

NOTE

The facilitator guide includes an example of a planned activity that can be shared with participants.

Have participants form small groups comprised of staff who work in the same classroom or program, if possible.

NOTE

Review *Tools for Supervisors* for a more in-depth look at planning as a part of cycle for improving teaching.

HANDOUT

Distribute the *Planning in Your Classroom* handout and review directions.

Each group selects a learning domain and strategy for fostering children's thinking skills and develops an activity plan.

DISCUSSION

Ask participants to implement the activity in their classrooms and to discuss how the activity went at a staff meeting, and/or to share back information with the larger group at the next in-service meeting.

Possible questions to ask:

- What was your experience of the activity?
- How did the children respond?
- What went well?
- How might you do things differently in the future?

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