
Best program ever!
NISE
NATIONAL INFORMAL
STEM EDUCATION
NETWORK

Presenters

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Session overview

PART 1:

Program delivery: Team-building and improv games

Program development: Iterative development process

Brainstorming activity: Program planning

Improvement: Evaluation and team-based inquiry

PART 2:

Program delivery: Team-building and improv games

Program development: Brief overview of iterative process

Rapid prototyping: Program planning and development

Resources: Available for free download

Goals

Our goals for participants:

- Learn and apply methods and practices for engaging diverse public audiences
- Gain access to resources to help create great programming, especially related to STEM learning
- Feel part of a broader museum community

Your goals:

- One big thing you each hope to learn

IMPROV GAMES

nisenet.org

What's in the Box? Improv Exercise

1. Everyone find a buddy.
2. Person A walks up to person B holding a mimed box.
3. Person B steps forward and asks… "What's in the box?
4. Person B opens the box and defines the content, with whatever they imagine.
5. Person A gives a specific reason for giving the gift to Person B. The reason should explain how the gift meets one of their partner's needs.
6. *Person B* accepts the reason given by their partner and adds information to help support it.

What's in the Box? Debrief

Debrief questions

1. How did you know what was in the box? What did you do to figure out what was inside?
2. Who thought that the object in the box was something different than what their partner said?
3. How would you describe your experience in this exercise? What helped us be successful?
4. What techniques did you use to come up with a specific reason that the gifts were great?
5. How could you apply these techniques to engaging with guests? What is a specific example from your experience?

BEST PRACTICES

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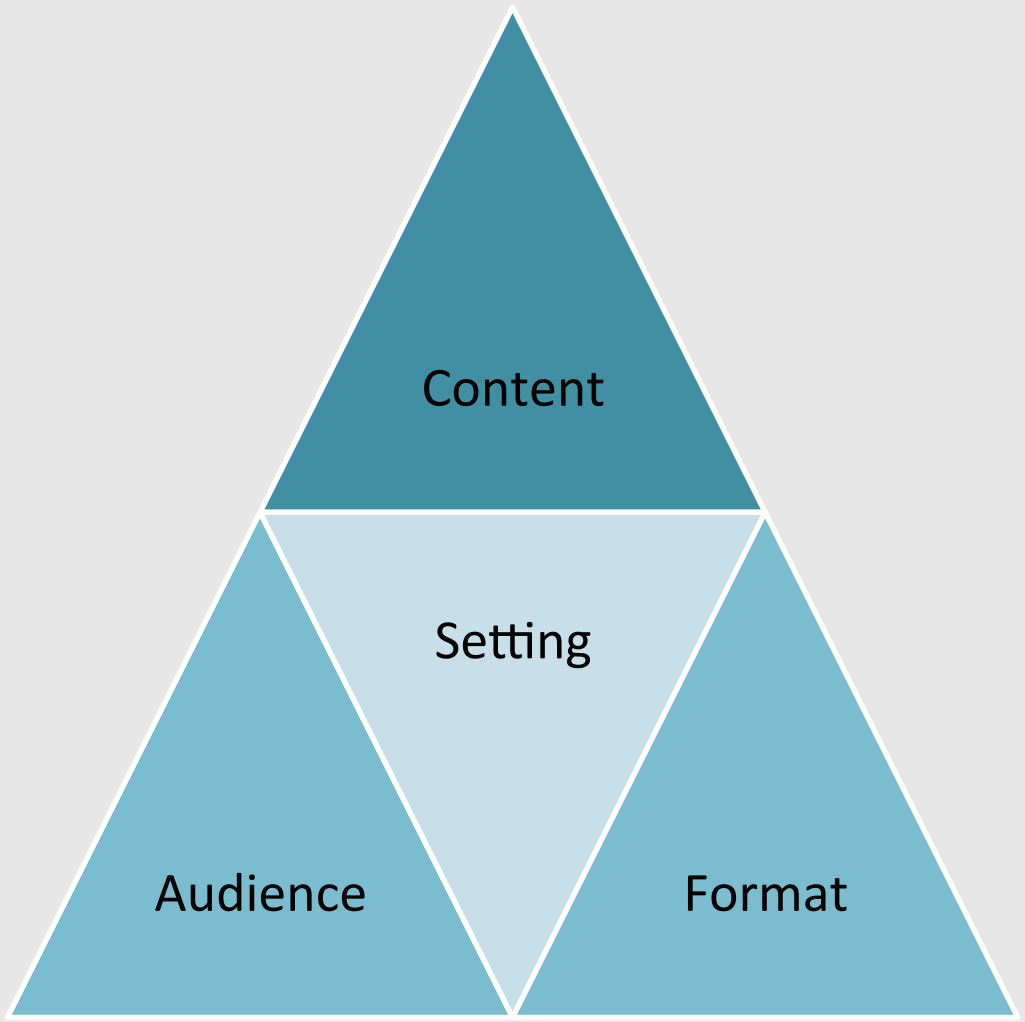
Program planning



Define the program:

- Target audience
- Program format
- Learning objectives

Identify the parameters:

- Space (setting)
- Budget
- Timeline
- New program or adaptation?

Planning – setting

What opportunities and constraints does your setting offer?

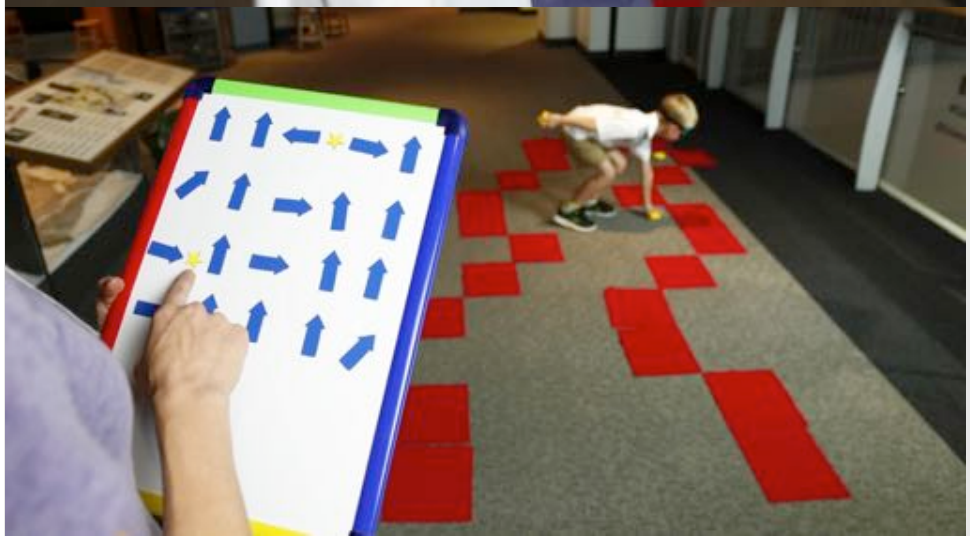
- Typical participants
- Participant expectations
- Furniture and equipment
- Surroundings (distractions)

Planning – audience

Who do you expect to participate? How can you be as inclusive as possible?

- Consider the needs of a wide spectrum of learners
- Plan for inclusion from the start
- Provide multiple means of understanding and engagement
- Gather feedback from expert advisors and target audiences
- Find ways to reach underserved audiences—it's OK to start small and build on your successes!

Planning – format



What kind of learning experiences make sense for your audience and setting?

- Small or large groups
- Program length
- Nature of the experience
- Context

Planning – learning objectives

What kinds of learning outcomes (change) do you hope to have?

e.g. for science programs:

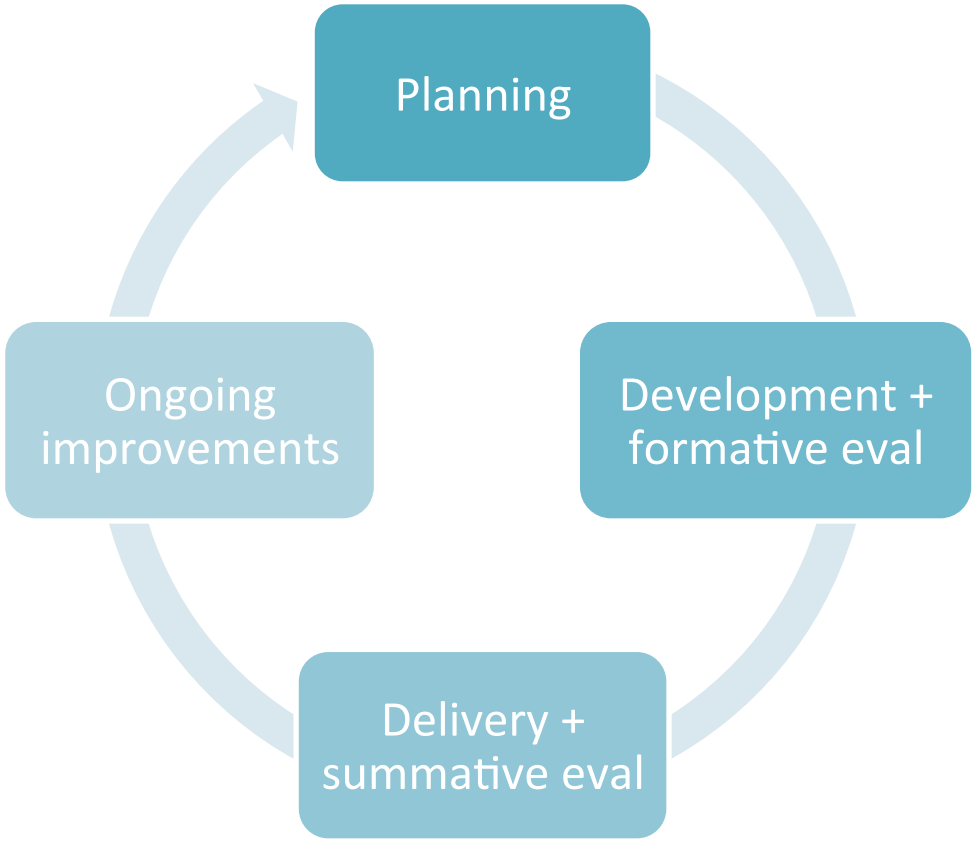
- Developing interest in science
- Understanding science knowledge
- Engaging in scientific reasoning
- Reflecting on science
- Engaging in scientific practice
- Identifying as a science learner

Planning – two different programs

Horton Senses Something Small
Setting: Children's museums (and other orgs)
Big idea: There are things that are too small to see
Audience: Early learners
Format: Story time followed by hands-on activities

Attack of the Nanoscientist
Setting: Science museums (and other orgs)
Big idea: Nanoscience may lead to new applications in medicine, computing, materials, defense, environment, and consumer products
Audience: All ages
Format: Comedic theater

Program development



Development process

Create prototype

- Research online
- Find successful examples
- Try things out

Get input

- Educators
- Experts
- Participants

Test systematically

- Traditional eval
- Reflective practice
- Team-based inquiry

Make improvements

- Strengthen learning
- Polish materials

Development – tips

LEARNING OBJECTIVES

- **Be explicit** about your audience and objectives
- **Be ruthless** about designing for them
- **Be realistic** about what's possible in an informal learning environment

BEST PRACTICES

- **Use an iterative process**
- **Use universal design** principles
- **Get feedback** from peers, participants, and experts

PRACTICAL CONSIDERATIONS

- **Think ahead** to implementation, so it's easy to set up, deliver, clean up, and store materials
- **Document** the program so others can learn and use it

Development – program strategies

Social: Fosters positive social interactions

Multigenerational: Offers challenges that are fun for all ages

Straightforward: Easy to understand to quickly and easily engage participants

Aligned: Interactive aspects are directly related to the learning objectives

Development – universal design

All phases of development and implementation

Three guiding principles:

- Repeat and reinforce the main concepts
- Create multiple entry points and multiple ways of engagement
- Provide physical and sensory access to all aspects of the program

CREATIVITY & PLAY

Port Discovery

PORT DISCOVERY CHILDREN'S MUSEUM

Our play-to-learn philosophy opens the door for children to discover and explore the world around them and to lead smarter, healthier, more engaged lives.

PLAY= LEARNING

STEM IN SPRING: NANO DAY

STEM IN SPRING: EARTH & SKY DAY

GUIDED PLAY CHECKLIST

Reviewer: _____

Learning-through-Play Program Checklist
Hot Discovery, Program Floor Review by Education Staff

Program Title: _____ Date: ____ Group Grade: _____

PA Facilitating: _____ Group Size: _____

Circle Group Order: 1st 2nd 3rd Total Group Time in Exhibit: _____

Describe how well you saw the following happen in the program:

Tenants of Play
Provides Children Opportunities to:

☐ [Take Risks: (take chances; challenge their own limits/boundaries)] _____

☐ Make Mistakes: (try and try again; welcome mistakes as part of exploration) _____

☐ Explore New Ideas: (expand what they know through doing) _____

☐ Experience Joy: (play with [or materials, do [on activities, be "lanced"]) _____

☐ Collaborate: (cooperate in a large or small group or a pair) _____

Guided Play

☐ Adult-Initiated: (Directly or indirectly: Adult planning and guidance initiates the play experience.)

☐ Child-Directed: (child determines the course of the play, within the parameters that the adult has initiated)

☐ Established Learning Objectives: (intentional learning objectives are set as outcomes of the children's play.)
Academic / Content Knowledge, Social Emotional Foundations, Learning and Innovation Skills, Information, Media and Technology Skills, and Life and Career Skills

☐ Space and Materials Are Set Up Strategically: (The use of space and choice of materials "guides" the play to meet the learning objectives.)

☐ Adult Plays Supportive Role During Activity: (Adults are present and engage with children in a supportive capacity that "guides" the play rather than gives answers.)

Program Facilitator(s): _____

Teachers/Chaperones/Family Members: _____

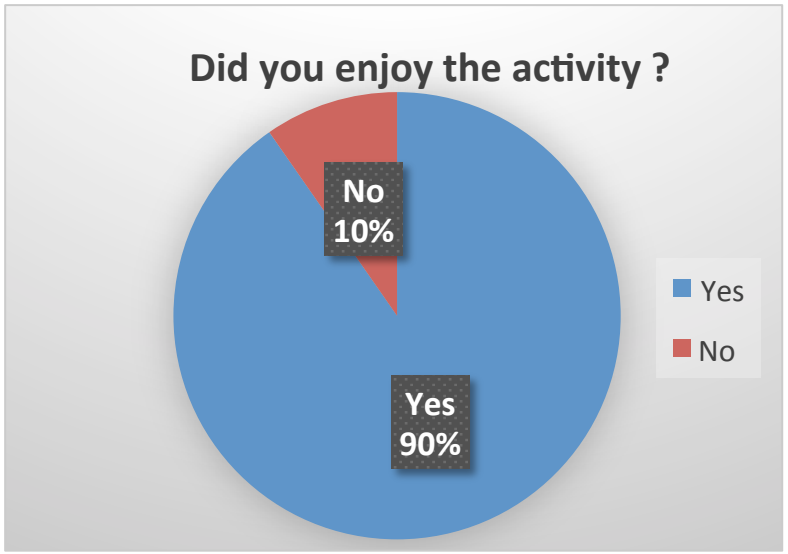
Comments about Direct Instruction Components: _____

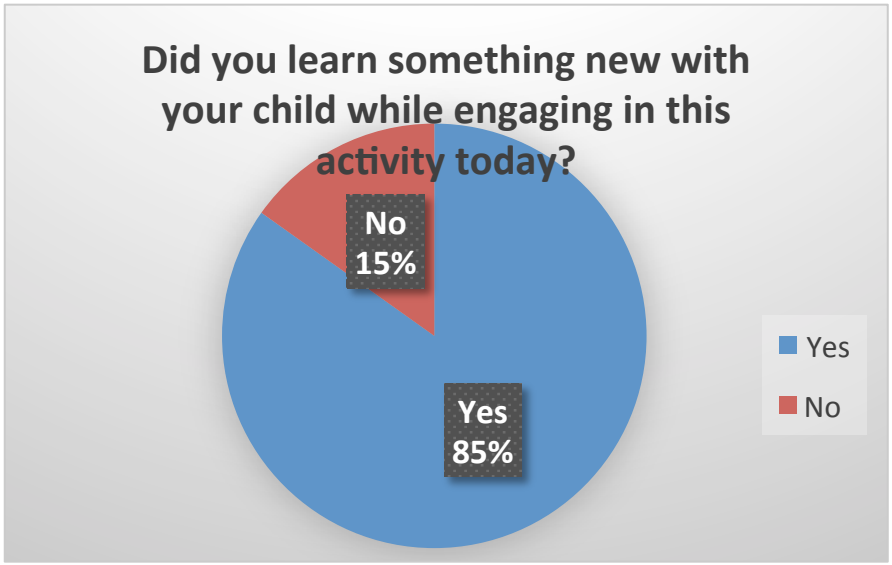
Did Co-Opted and/or Free Play Occur? If So, Describe: _____

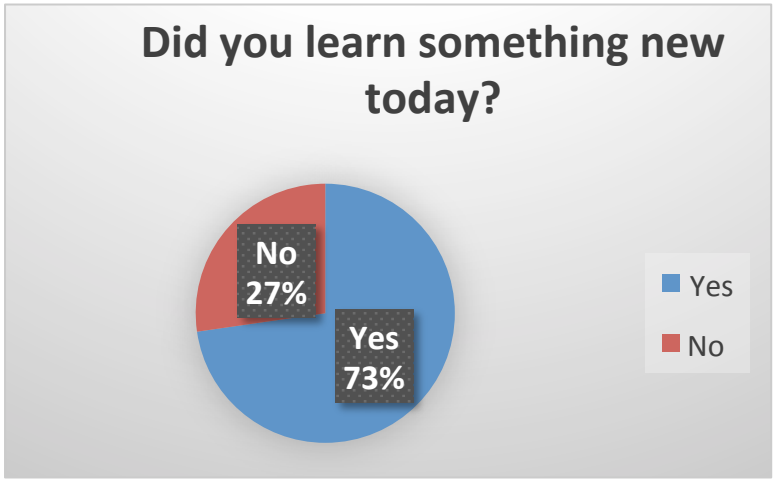
Other Comments: _____

DESIGN, TEST, BUILD PROTOTYPE

PROTOTYPE SURVEY








EDUCATION TEAM

RAPID BRAINSTORMING

Program planning activity

CHALLENGE: Plan a program around the topic on your table. You have less than 10 minutes!

- Work as a group.
- Incorporate everyone's ideas and perspectives.
- Jot down some notes to leave for the next session.

PROGRAM AUDIENCE & FORMAT: These are up to you, but be sure your group has a specific audience in mind.

PRESENTATION: We'll popcorn around the room to share some ideas.

HAVE FUN ☺

IMPROVEMENT

Development process

Create prototype

- Research online
- Find successful examples
- Try things out

Get input

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- Experts
- Participants

Test systematically

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- Team-based inquiry

Make improvements

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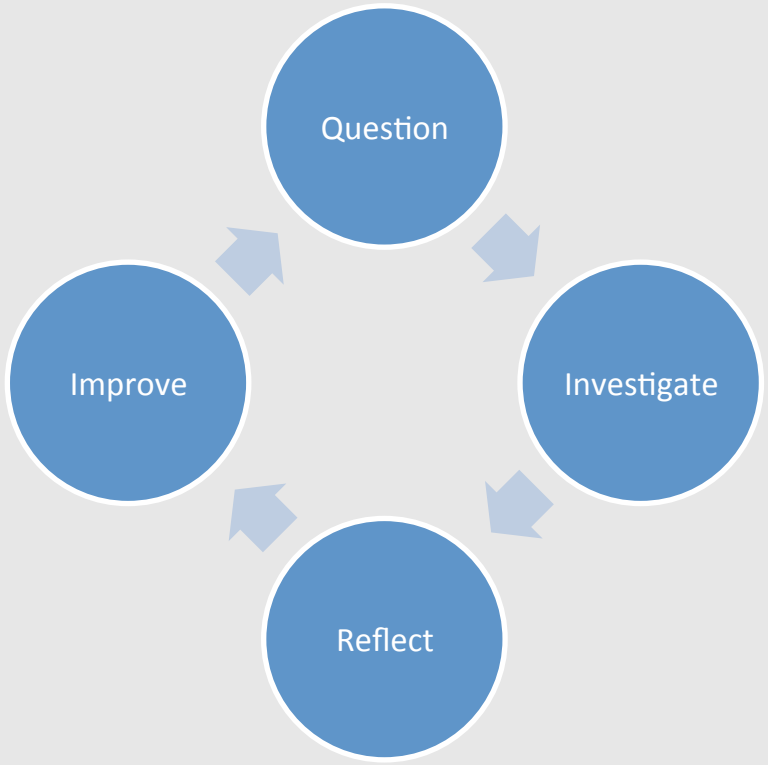
Team-based inquiry

An approach to empowering professionals to get the data they need, when they need it, in order to improve their products and practices and create successful educational experiences



- Systematic
- Led by non-evaluation professionals
- Collaborative and team based
- Small scale and focused
- Embedded in work

Horten Sense Something Small

Does the program engage young children? How could it be improved?

Data collection

- Observations of participants
- Surveys with caregivers and parents

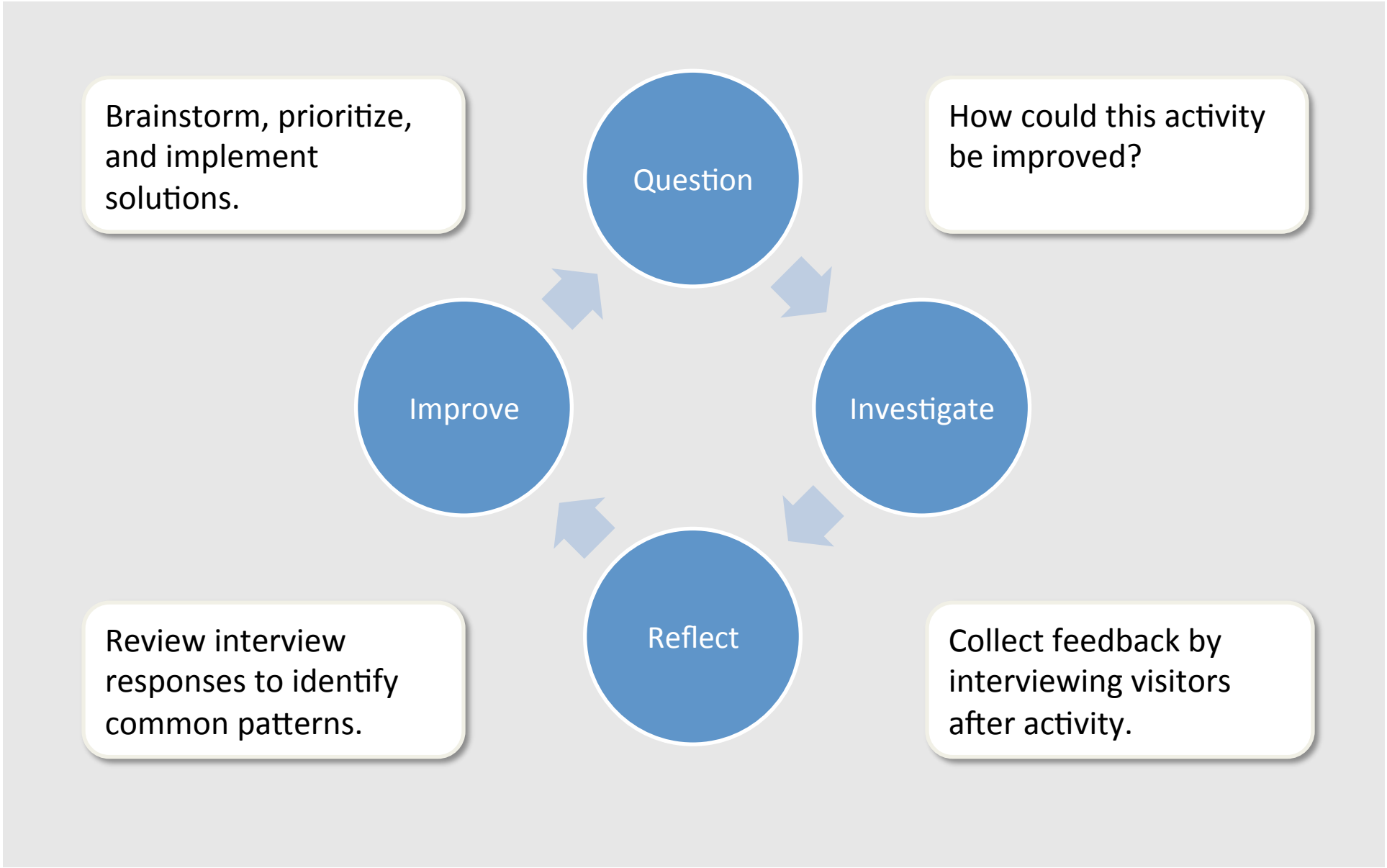
Example improvements

- Shortened story
- Prompts to promote family engagement

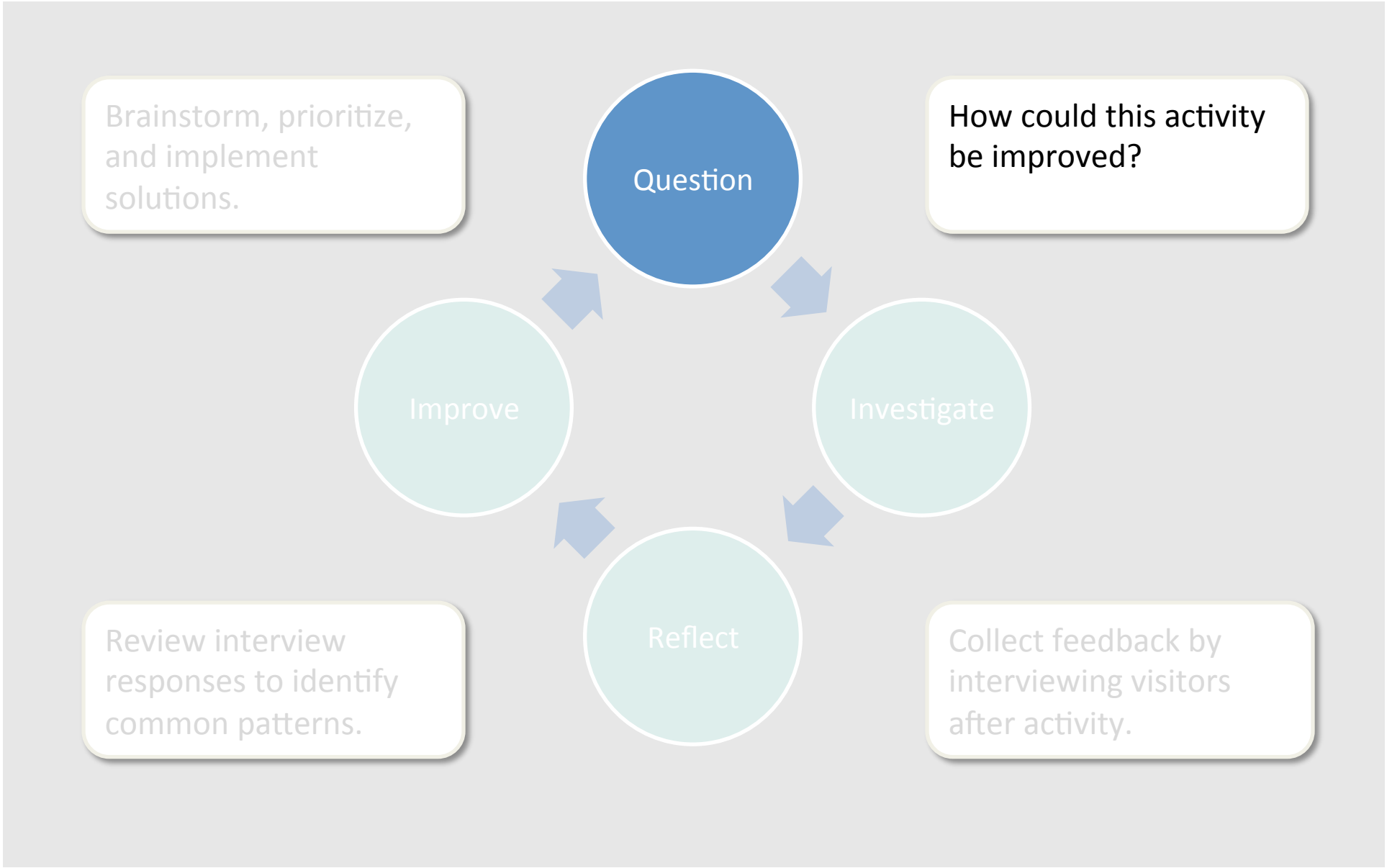
Team-based inquiry guide

www.nisenet.org/catalog/tools_guides/team-based_inquiry_guide

Team-based inquiry



Team-based inquiry



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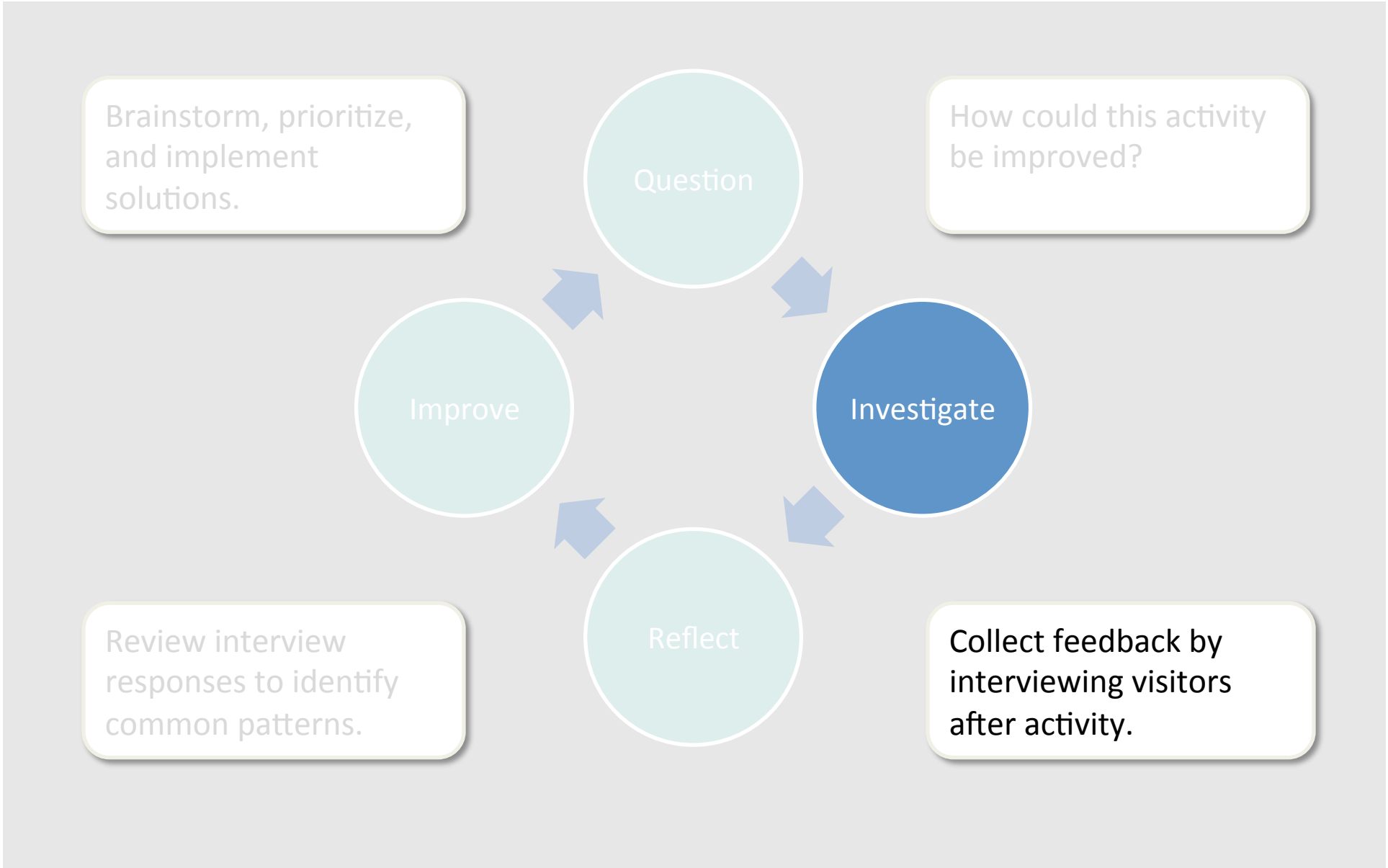

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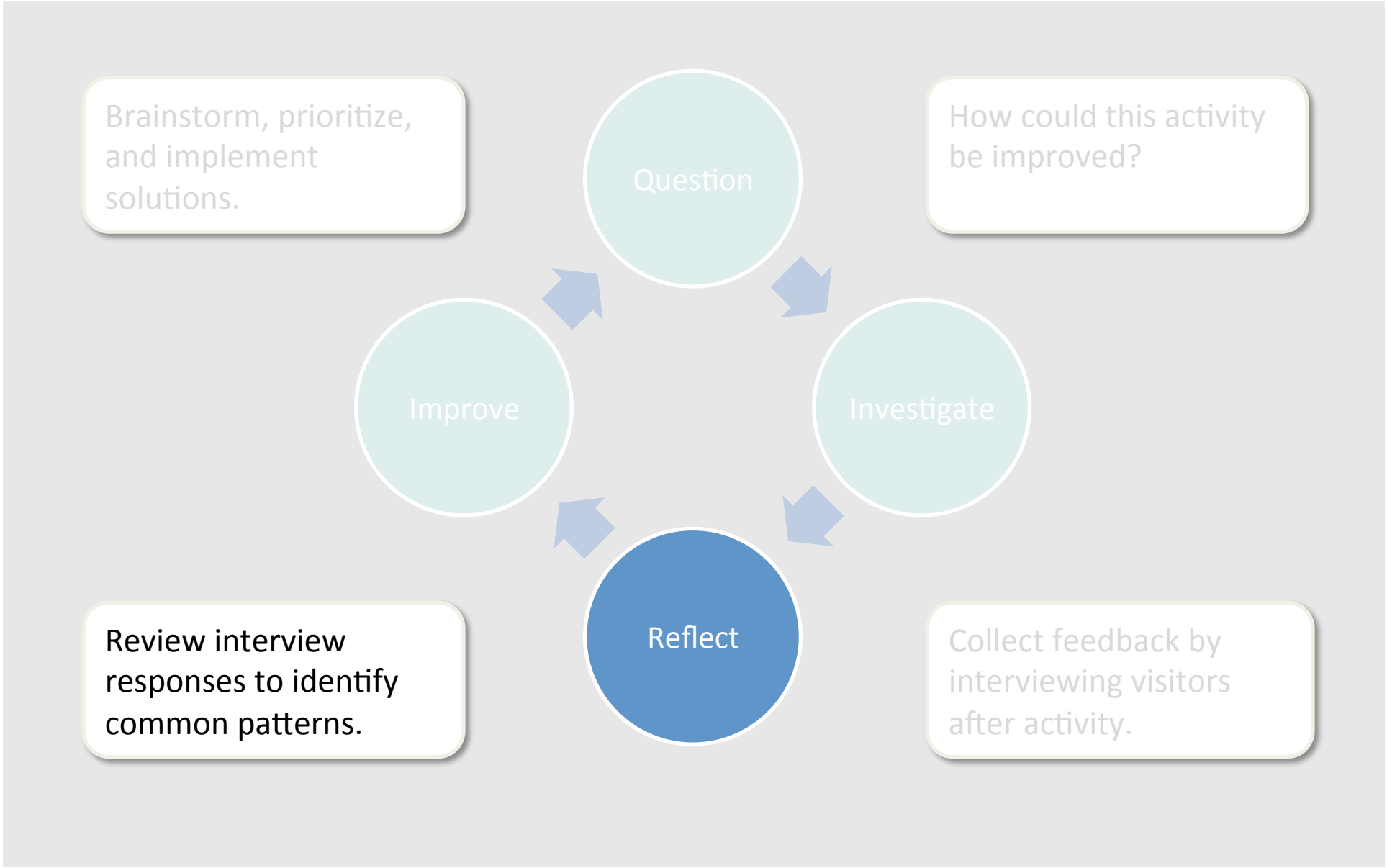
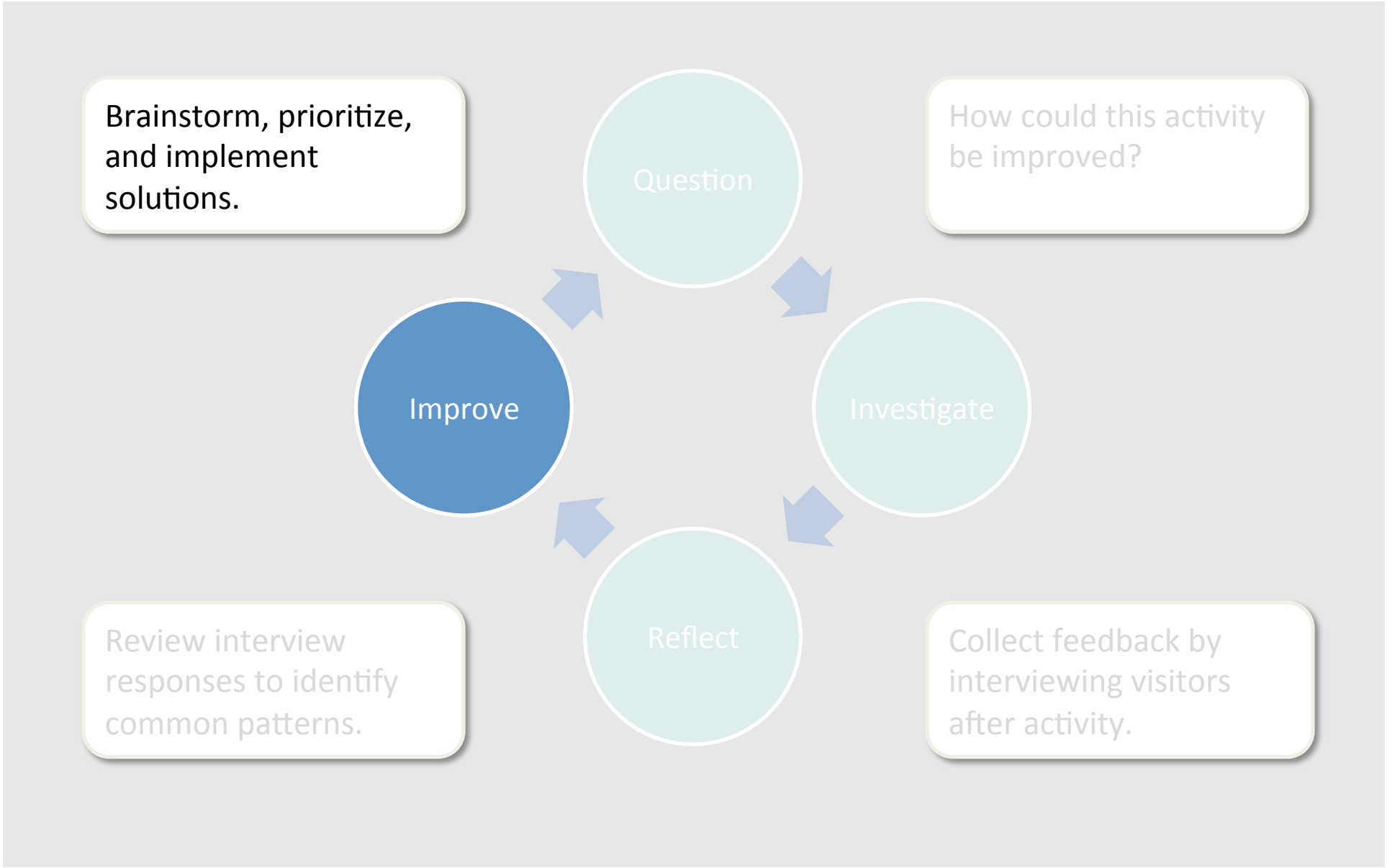


Team-based inquiry



Asking Questions

What's a question you care about that you think you could investigate with TBI?

WRAP UP + RESOURCES

NISE Net

Website:
nisenet.org

Newsletter:
nisenet.org/newsletter

Social media:
nisenet.org/social

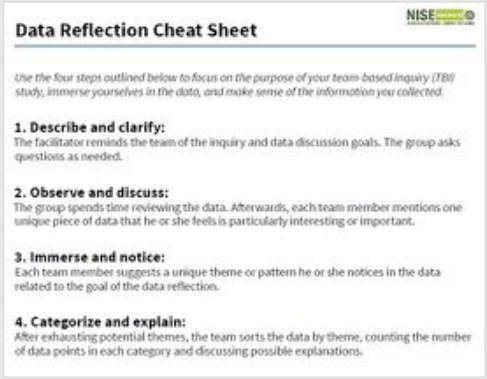
nisenet.org

READY-TO-USE RESOURCES

Professional development guides
Program templates
Evaluation tools
Training slides and videos
Improv exercises
…and more!

MANY TOPICS

Programs, activities, games
Presentation skills
Partnerships and collaborations
Universal design
Team-based inquiry
…and more!



Professional resources – nisenet.org

Guides
Bilingual Design Guide for Educational Experiences in Museums
Collaboration Guide for Museums Working with Community Youth-Serving Organizations
Gaming and the NISE Network: A Gameful Approach to STEM Learning
NanoDays: A NISE Network Guide to Creating Activity Kits, Building Communities, and Inspiring Learning
Nanotechnology and Society: A Practical Guide to Engaging Museum Visitors in Conversation
Program Development: A Guide to Creating Effective Learning Experiences for Public Audiences
Team-Based Inquiry: A Practical Guide for Using Evaluation to Improve Informal Education Experiences
Translation Process Guide for Educational Experiences in Museums
Universal Design Guidelines for Public Programs in Science Museums

Videos
America's Next Top Presenter
Speed-ucate Video, or How to Have an Effective Science and Society Conversation
Team-Based Inquiry Training Videos
(Plus lots of training videos for specific activities!)

Tools
Improv Exercises
Museum & Community Partnerships: Collaboration Guide and additional resources
NanoDays Training Materials
Nano and Society Training Materials
NISE Network Program and Activity Templates
NISE Network Program Evaluation Tools

Workshop Recordings and Packages
Bilingual Audiences Workshop Resources
Improving NanoDays Trainings with Team-Based Inquiry: Partner Examples
Making Evaluation Design Decisions: When Basic Evaluation Methods Meet the Real World
Team-Based Inquiry Stories: NISE Network Partners Share What Works (and What Doesn't!)
Universal Design of Educational Programs Workshop Resources
Videos 101: Tips, Tricks, and Strategies for Small-Scale to Large-Scale Video Production

Thank you

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PART 2
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Name & Gesture Improv Exercise

1. Each participant states their name and creates a physical action
2. Go around the circle and have each participant state their name and create a physical action. The full group should repeat the person's name and gesture after each participant.
3. Participants give their own name and gesture and then the name and gesture of someone else in the circle. The participant they identify immediately does their name and gesture followed by someone else's name and gesture.

Name & Gesture Debrief

Debrief questions

1. What are some things that made this exercise fun?
2. What skills did we need to be successful as a group playing this exercise?
3. How might we use [*identified skills*] when engaging guests in conversations?
4. What are some benefits of knowing names and interests? With team members? With guests?