

# Module 5

## Recognizing Expectations and Shared Understandings

### Module Overview

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#### Objective

Participants will learn another way to look at family interactions at exhibits and reflect on previous videos through the lens of activity frames. Activity frames are a kind of shared understanding that emerges within families about what they should be doing, how they should be doing it and what sorts of behaviors and talk are acceptable.

#### Materials needed



- Module 2 Video 1 (<https://vimeo.com/196314907>)
- Bonus Video 1 (*please note that this video does not have subtitles*) (<https://vimeo.com/196318208>)
- Handouts (one per participant)
  - Introducing Module 5: Recognizing Expectations and Shared Understandings (a few copies in case participants need them)
  - Module 5 Video Discussion Sheets
- Chart paper or whiteboard and markers

#### Plan for session (80-90 minutes)



- 1) Warm-up activity, 10 minutes (optional)
- 2) Introducing the module, 10 minutes
- 3) Video discussion, 60 minutes
- 4) Homework, 10 minutes

## Warm-Up Activity

10 MIN



If you opt to do a warm-up activity, start the session with it. We recommend the improv activity, “What Are You Doing?” (<http://www.nisenet.org/catalog/improv-exercises>). In general, an effective warm-up activity for this module will focus on different roles people take at exhibits, how different approaches families take can affect changes the outcome, and how different people respond to conflicting or shared goals within their group.

## Introducing the Module

10 MIN



Introduce this module’s topic, paraphrasing what is written below. Participants should have read “Introducing Module 5: Recognizing Expectations and Shared Understandings” prior to this session. (Unlike Modules 1–4, “Introducing Module 5: Recognizing Expectations and Shared Understandings” is located at the end of this module, rather than the end of the previous module.)

### Introducing the topic



*In this module, you will learn about six activity frames that can have a significant effect on how families interact with exhibits. You will learn how to identify specific frames and start thinking about ideas for facilitating families through an activity frame lens. You will reflect on earlier modules and begin thinking about how, as a facilitator, you can use the lens of activity frames to better understand a family’s motivation and approach, and potentially guide them toward a richer exhibit experience.*

### Connecting to previous experiences

In small groups, participants discuss their responses to the questions at the end of the handout “Recognizing Expectations and Shared Understandings.” After a few minutes, continue the discussion in the larger group.



- 1) When have you participated collaboratively or competitively with a group at an exhibit? What were your goals? What did you think were the goals of the other members? How did your group interact with each other?
- 2) What factors might influence how a family approaches a challenge at an exhibit—whether they spend a long time exploring all the parts (*Refining*) or move through the activity as quickly as possible (*Completing*)?
- 3) How do you think the perception of an activity by a family as *Teaching* or *Exploring* would influence your interaction with that family at an exhibit? What facilitation strategies might you use or change to respond to each approach?

In this module, you will use two videos from other modules:

- Module 2 Video 1
- Bonus Video 1 (*please note that this video does not have subtitles*)

### Introducing the videos



Each of the videos in this module take place at a different exhibit, “Drawing in Motion” or “Balancing Art.” One of these you have viewed before; the other may be new to you. You will now watch and discuss them through the lens of activity frames. Participants should have read the exhibit descriptions as part of their preparation for this session (found in “Introductory Session: Introducing the REVEAL PD Program”). Before beginning, ask if there are any questions about the exhibits.

Pass out copies of the Video Discussion handout and give participants a minute or two to review it. Paraphrase the following information about the videos to participants.



*In the first video segment you are about to watch (Module 2 Video 1), a facilitator is working at “Balancing Art” with a family of two adults and three boys between about 7 and 11 years old. The video segment starts partway through the interaction. Up to this point, two of the older children have been handling the exhibit pieces more than the younger child and have been discussing the mathematics of the exhibit. One adult has talked with the boys and interacted with the exhibit several times. The other adult has stayed in the back. In the second video (Bonus Video 1), a child begins to investigate the “Drawing in Motion exhibit,” encouraging the adults in his group to join, while the facilitator talks to another visitor group.*

*We will watch each video twice. The first time, ignore the handout and just try to take in the whole interaction. In between the first and second viewing, read over the questions. During the second viewing, I encourage you to notice what clues you can pick up about family members’ approaches to the exhibit, goals, and roles. You may also notice how the facilitator picks up on and responds to this information and what he or she says or does to help support the family’s goals. Notice how the visitors—both adults and children—respond to this facilitation. In preparation for discussing your observations and reactions, you will have time to jot down responses to the questions on the handout after the second viewing of each video.*

### Key video moments for the session leader

Below are some moments in the video when something particularly noteworthy happens relevant to expectations and shared understandings. This is not an exhaustive list of every interesting moment in each interaction. We point these out to help you, the session leader, have evidence to support observations by participants. We do not recommend giving these lists to participants.

### Module 2 Video 1:

- 0:29 Facilitator offers a challenge and hands a mystery piece to the adult female.
- 1:30 Facilitator hands a mystery piece to the adult male.
- 2:12 Facilitator hands a mystery piece to the adult female.
- 2:48 Adult female takes a photo.
- 3:20 Facilitator assigns a role to the youngest boy.
- 3:50 Facilitator asks adults if they remember the values of the mystery pieces and tells the boys that they can ask adults for that information.
- 4:09 Facilitator steps to the side to talk with the adults.
- 4:55 Facilitator gives a job to the adult female.
- 5:47 Facilitator encourages oldest boy to use white board.
- 6:28 Facilitator explains to other family what is going on.
- 6:45 Group celebrates success.

### Bonus Video 1:

- 0:18 Adult male shrugs off child.
- 0:40 Facilitator asks the child how they think the exhibit works.
- 0:50 Adult male approaches exhibit.
- 0:52 Child reads instructions from screen.
- 1:20 Facilitator asks child for exhibit orientation observations.
- 1:35 Child continues to read instructions from screen and give instructions to the adult male.
- 1:50 Adult male leaves the exhibit.
- 2:00 Child attempts Free Draw alone.

### Video discussion: Module 2 Video 1



Watch the video segment twice. Then take 3–5 minutes for participants to quietly jot down their answers to questions on the first page of the video discussion handout.



Next break into small groups of 2–4 participants (if possible, try to mix up groups from previous discussions) and share answers. Ask one member from each group to share a summary of their discussion with the larger group.

In your discussion, keep track of the activity frames participants mention on the whiteboard or chart paper. You may want to write down other group responses as well, but keep those ideas separate from the list of frames. Note any changes in frames during the interaction and/or actions facilitators take to shift activity frames.

- 1) What roles do each of the children take on? The adults? Is this family in an *Exploring* or *Teaching* activity frame? How does the facilitator affect these roles?
- 2) As the facilitator introduces the question marks, how do the family members work together—competitively or collaboratively? Do all family members have the same goal orientation? How do they interact differently with each new question mark?
- 3) When the facilitator assigns a job to the child wearing plaid, how does it affect each family member's ideas of collaboration and competition?
- 4) Does this family take an approach of *Completing* or *Refining*? Do you think all family members share the same activity frame? How do you know?

### Video discussion: Bonus Video 1



Watch the video segment twice. Then take 3–5 minutes for participants to quietly jot down their answers to questions on the second page of the video discussion handout.



Break into small groups of 2–4 participants and share answers. Ask one member from each group to share a summary of their discussion with the larger group. Continue to record activity frames on the chart paper or whiteboard.

- 1) What activity frames do the child and the adult with the mustache assume (*Teaching* or *Exploring*)? How do you know?
- 2) What factors do you see influencing how the family works together (*Competing* or *Collaborating*)?
- 3) How does each family member approach the activity (*Completing* or *Refining*)? How do the differing expectations affect the family interaction at the exhibit?
- 4) What does the facilitator do to support or challenge the activity frames of the family?

## Video discussion for both videos



After watching both videos and having small group discussions about each, continue the group conversation about the broader themes and implications of activity frames.

- 1) How could you support a family that has a *Completing* activity frame? Or a *Refining* activity frame? How would you interact with a family whose members differ in how much time they want to spend at an exhibit in your institution?
- 2) If you were facilitating an exhibit at your institution, what might you do or say to support a family *Competing* or *Collaborating* while also supporting intergenerational communication, the family context, and their content exploration?
- 3) How do you think being able to recognize activity frames will benefit your facilitation?

At the conclusion of this module, record the list of activity frames and strategies generated during the conversations (e.g., take a photo or type the list) and share the ideas with participants to help them explore how to recognize activity frames.

## Homework

10 MIN



After this module, participants will practice noticing activity frames both with and without facilitators present. They will also try out some facilitation strategies for supporting and shifting activity frames.

Pass out copies of the Module 5 reflection homework handout to each participant. Allow participants a few minutes to read over the homework handout. Ask for any questions, clarifications, or comments.

Because there are no subsequent modules, you may want to schedule one additional, shorter meeting (about an hour) with the group to discuss the Module 5 homework. If you have not done so yet, this can also be a good chance for the group to reflect on the professional development program as a whole. (See the “What now?” section of the professional development guide for additional ideas about how to build on the program and continue to promote professional learning within your organization.)

## For Further Exploration

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### More videos

Full-length, unedited version of the video from Module 2 (without subtitles) is available at: <https://vimeo.com/203905609>.

You can also watch videos that were assigned to other modules and the bonus videos, paying particular attention to activity frames, how they may shift during an interaction, and strategies facilitators use to change activity frames.

### Readings

The following books and articles can be useful for continuing to explore the topics introduced in this module:

Ramos-Montañez, S., Randol, S., Herran, C., Pattison, S., Rubin, A., Shagott, T., Andanen, E., & Benne, M. (2018). **Emergent Activity Frames in Facilitated Family Interactions at Math Exhibits**. Portland, OR: Oregon Museum of Science and Industry. <https://external-wiki.terc.edu/display/Reveal>.

Pattison, S. A., & Dierking, L. D. (2013). **Staff-mediated learning in museums: A social interaction perspective**. *Visitor Studies*, 16(2), 117–143. [http://www.informalscience.org/sites/default/files/Pattison%26Dierking\\_Manuscript11125.pdf](http://www.informalscience.org/sites/default/files/Pattison%26Dierking_Manuscript11125.pdf)

Pattison, S., Gontan, I., & Ramos-Montañez, S. (in review). **The identity-frame model: A preliminary framework to describe situated identity negotiation for adolescent girls participating in an informal engineering education program**. *Journal of Learning Sciences*.

Rowe, S. (2005). **Using multiple situation definitions to create hybrid activity space**. In S. Norris & R. H. Jones (Eds.), *Discourse in action: Introducing mediated discourse analysis* (pp. 123–134). New York, NY: Routledge.

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## Video Discussion

*Module 5: Recognizing Expectations and Shared Understandings*  
*Handout for participants*

### Module 2 Video 1

- 1) What roles do each of the children take on? The adults? Is this family in an *Exploring* or *Teaching* activity frame? How does the facilitator affect these roles?
  
- 2) As the facilitator introduces the question marks, how do the family members work together—competitively or collaboratively? Do all family members have the same goal orientation? How do they interact differently with each new question mark?
  
- 3) When the facilitator assigns a job to the child wearing plaid, how does it affect each family member's ideas of collaboration and competition?
  
- 4) Does this family take an approach of *Completing* or *Refining*? Do you think all family members share the same activity frame? How do you know?

## Bonus Video 1

- 1) What activity frames do the child and the adult with the mustache assume (*Teaching* or *Exploring*)? How do you know?
- 2) What factors do you see influencing how the family works together (*Competing* or *Collaborating*)?
- 3) How does each family member approach the activity (*Completing* or *Refining*)? How do the differing expectations affect the family interaction at the exhibit?
- 4) What does the facilitator do to support or challenge the activity frames of the family?

## Both Videos

- 1) How could you support a family that has a *Completing* activity frame? Or a *Refining* activity frame? How would you interact with a family whose members differ in how much time they want to spend at an exhibit in your institution?
- 2) If you were facilitating an exhibit at your institution, what might you do or say to support a family *Competing* or *Collaborating* while also supporting intergenerational communication, the family context, and their content exploration?
- 3) How do you think being able to recognize activity frames will benefit your facilitation?

- 1) Take some time, even just 20 to 30 minutes, to watch both facilitated and unfacilitated family groups engaging with exhibits at your institution. When you are watching another staff member, first ask him or her for permission to observe. When watching unstaffed interactions, respect the privacy of families by being unobtrusive and ending your observation if families appear to be uncomfortable.
  - For unfacilitated groups: Do you see any examples of *Teaching* and/or *Exploring*? Are they *Competing* or *Collaborating*? Are they moving through the exhibit rapidly or are they exploring all parts in-depth?
  - For facilitated groups: How does the facilitator support the family's activity frames to help the family have an enjoyable experience? What, if anything, do they do or say that changes the activity frames?
  
- 2) Now that you've watched examples of facilitators interacting with families through the lens of activity frames and considered how to incorporate new ideas into your own practice, you can try these strategies out yourself (if needed, refer to the list generated during the video discussion). Before you meet for the next session, try to incorporate a few new strategies into your facilitation with families at exhibits. Observe how visitors react and reflect on ways you can continue to improve the new approaches. Choose one interaction to share with the group during the next module session.

REVEAL researchers revisited some of the data collected during the earlier work upon which Modules 1 through 4 were developed. The findings from this study serve as the basis for Module 5: Recognizing Expectations and Shared Understandings. This module will introduce the concept of activity frames: the understandings or expectations family members and staff have about the nature and goals of the interaction at an exhibit. They are a kind of shared understanding that emerges within families about what they should be doing, how they should be doing it and what sorts of behaviors and talk are acceptable. Activity frames are a different way of looking at exhibit interactions. Instead of focusing exclusively on *what* families are doing at an exhibit, an activity frame approach looks more at *how* families perceive the activity and on *how* families are engaging with the exhibit and each other. Activity frames also take into consideration the possibility that individuals within the group may have different ideas about how things should be done. Activity frames are not static and are continuously negotiated by the members of the group; there can even be conflict or disagreement among group members about the activity frame. As you read more about activity frames, you will likely find much of it familiar. Activity frames are not describing anything new; instead, this module provides names and definitions, a shared language, to think and talk about things we have all seen in our institutions.

Research has shown that activity frames are a fundamental part of human social interactions, affording and constraining the roles participants can adopt within a specific interaction, behaviors that are expected or sanctioned, and ways that actions and talk are interpreted (Rowe, 2005, Pattison et al., in review, 2018). Goffman (1986) described activity frames as certain situational characteristics (e.g. understandings, expectations, goals) within individual interactions that become salient, determining how participants perceive that particular situation and the roles and the identities that they assume while in it (Greeno, 2009; Hand, Penuel, & Gutiérrez, 2012; Hegedus et al., 2014; Norris, 2011; Norris & Jones, 2005; Scollon, 1998). According to Rowe (2005), activity frames are central to social interactions because they determine which behaviors are expected and acceptable, including the roles available and the interpretation of behaviors.

The REVEAL research team identified six activity frames which appear most consequential to the quality of the exhibit experience and richness of the mathematical behaviors observed. These six frames are presented as contrasting pairs to facilitate interpretation and illustration and include (a) Completing and Refining, (b) Teaching and Exploring, and (c) Collaborating and Competing.

### **Completing and Refining**

This contrasting pair of activity frames refers to the way that families approach engaging with the challenges provided by the exhibit, facilitators, or other members of the group. For the purposes of this conversation, a challenge is defined as a call to take part in an activity and can be built into an exhibit, such as the drawing challenges at the “Drawing in Motion” exhibit, or issued by a facilitator or family member, such as a balancing challenge at the “Balancing Art” exhibit. Groups coded as in a Completing Activity Frame perceive the exhibit as a task that they want to finish, sometimes to simply get it done and move onto some other activity within the museum or to meet a goal. Under this activity frame, families focus on working through the challenges as quickly as possible. Conversations among group members usually revolve around the speed or process of completing the challenge and there is not as much room for iteration.

Groups coded as in a Refining Activity Frame generally perceive the activity as a task that they want to complete accurately or thoroughly by refining their approach and strategy. These groups usually engage in iteration until they meet a “standard” set by the group. In these cases, families often try a challenge multiple times when the outcomes are not as they anticipate, such as fixing a “mistake” by erasing a diagonal line in at the DiM exhibit because it looks “messy” or finding alternative solutions to a challenge that satisfies the members of the group. Often families coded under this activity frame discuss their approaches to the challenge and are vocal about their goals or strategies, such as coordinating movements at the DiM exhibit (e.g. “Let’s go slow,” “On the count of three”).

### **Teaching and Exploring**

This contrasting pair of activity frames refers to the ways that families approach the learning goals underlying the activity. Families can perceive the activity as a didactic activity in which a member of the group or the facilitator takes on the role of teacher and others take more of learner roles. In these cases, one person appears in a position of authority relative to others. This person gives instructions to others, telling them what to do or how to do it. Conversations can include procedural assistance such as when members say “move to the circle,” “go up to 7 and stay put,” and “now, hang a 3 there.” They can also include the person taking on more of the facilitator role asking leading questions such as “Where are you thinking of putting that?” providing suggestions such as “What if you put it here?” and/or giving hints such as “Is there anything times 3 that will give you 28?” This person might ask for a summary statement, testing for understanding at the end of an interaction or providing a critique of the group’s performance. For example, “So how does where you put the weight affect the bar?”, “See when you move the slider, the line goes up,” or “You went past 10.” These questions and conversations appeared to be geared towards deepening conceptual understanding of or engagement with the exhibit.

In activity frames coded as Exploring, families appear to conceive of the exhibit as an activity where they will be engaging together. In this activity frame, family members work for the most part as equals at the exhibit. They may provide suggestions or directions to each other, but communication is not unidirectional from a place of authority to others; rather, it goes back and forth, or in multiple directions with everyone contributing. Members of the group likely consult and advise each other with no individual taking a leadership or supervisory position. In most cases, family members are working toward a similar goal and the communication and discussion between them is constructive. All parties appear interested in using the exhibit.

### **Competing and Collaborating**

This contrasting pair of activity frames involves the way that families approach the challenges provided by the exhibit, facilitators, or other members of the group. Families can perceive the activity as a collaborative activity where they need to work together to complete the activity. In this case, family members are working together toward a common goal. This is characterized by family members engaging in conversations and discussions about how to approach or solve a specific challenge or activity at an exhibit. These conversations could happen before engaging with the activities or during the time the family is working through the activity. In general, in activity frames coded as Collaborating, families decide together and agree on what they are trying to do as well as their approaches or solutions. In a collaborative frame, families use inclusive terms such as “let’s,” “we,” and “us.”

In a Competing Activity Frame a group perceives the activity as a competition, and members are not working together to complete the activity but rather working as individuals to see who can complete the activity first or better. Family members in a competitive frame are observed trying to outdo others in their group by proving themselves to be more competent, better, or faster than other members at finding solutions to the challenges or activities.

Sometimes emerging competitive activity frames are observed even when the activity encourages collaboration. For example, one of the exhibit affordances of “Drawing in Motion” is that it promotes collaboration by requiring two people to work together to create a picture; however, some groups instead work competitively. For example, the competition might revolve around which member can get to the designated coordinate first. At the “Balancing Art” exhibit, facilitators might encourage families to work together by asking one member of the group to hang a weight on one side of the bar and asking another family member to balance it by placing weights on the other side of the bar. This strategy, intended to foster a collaborative interaction, sometimes ends up in a Competing Activity Frame where a member of the group is trying to “stump” another family member.

Activity frames provide educators with a lens through which they can view a family interacting with an exhibit. Recognizing some common activity frames, and knowing how they interact with each other and can impact the exhibit experience, gives educators perspectives and tools for shaping the visitor experience.

Think about these questions in preparation for small group discussions when you meet to participate in Module 5.

- 1) When have you participated collaboratively or competitively with a group at an exhibit? What were your goals? What did you think were the goals of the other members? How did your group interact with each other?
- 2) What factors might influence how a family approaches a challenge at an exhibit—whether they spend a long time exploring all the parts (*Refining*) or move through the activity as quickly as possible (*Completing*)?
- 3) How do you think the perception of an activity by a family as *Teaching* or *Exploring* would influence your interaction with that family at an exhibit? What facilitation strategies might you use or change to respond each approach?

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## Activity Frames Indicators

### Module 5: Recognizing Expectations and Shared Understandings

#### Handout for participants

An effort has been made to identify indicators for each of the activity frames. In a situation where exhibits are facilitated, awareness of these activity frames may provide educators with a new perspective on how to guide family groups toward activity frames that appear to support math learning.

#### Description and Possible Indicators of Completing and Refining

<u>Completing and Refining</u> : involves the way that families approach engaging with challenges provided by the exhibit, facilitators, or other members of the group. Families can perceive the activity as a task that they want to finish in order to get it done or to move onto another activity (Completing). Families can also perceive the activity as a task that they want to engage in thoroughly and accurately by refining their approach and strategy iteratively (Refining).	
Completing	Refining
Working quickly	Responsive to feedback
Less responsive to feedback	More use of “standards” for satisfactory completion, repeating challenges and/or fixing mistakes
“Good enough” attitude/language	Conversation around goals
Stop after one completed challenge	Coordination
	Talk of strategies
	Repeat activities or accomplish multiple challenges

### Description and Possible Indicators of Teaching and Exploring

<p><u>Teaching and Exploring</u>: involves the way that families approach the learning goals underlying the activity. Families can perceive the activity as a didactic activity in which a member of the group takes on a role of authority, teaching or facilitating others in the group (Teaching). Families can also perceive the activity as an inquiry activity in which they will all engage with the exhibit, exploring and determining what they need to do together with or without specific goals (Exploring).</p>	
Teaching	Exploring
One-way communication	Two-way dialog
Conversation includes instructions, explanations, questions, suggestions, and statements	Statements and questions from participants
One individual in a position of authority	Participants on “equal ground”
Imbalance in verbal and physical activity between individuals	No individual taking a leadership or supervisory position
	Shared participation at exhibit

### Description and Possible Indicators of Collaborating and Competing

<p><u>Collaborating and Competing</u>: involves families’ negotiation of group member roles while engaging with the challenges provided by the exhibit, facilitators, or other members of the group. Families can perceive the activity as an activity in which they need to work together and help each other (Collaborating). Families can also perceive the activity as a competition in which some members attempt to “outperform” others doing something better or faster than others (Competing).</p>	
Collaborating	Competing
“We” language—Let’s work together	“I” language
Conversation around goals, what to do and how to do it	Less responsive to feedback
Helping each other	Individual focus on the exhibit and/or other individuals
Taking turns	Disagreement about what to do or how to do it
Individuals focus on group progress and dynamics	

## References

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