

EXPLORING NATURE WITH MAGNIFIERS

Preparation and Engagement Guidance

Magnifiers can support learners to directly engage with nature, look closely, and discover new worlds. Magnifiers can provide an immediate perspective shift and allow learners to see details they otherwise couldn't see. This card deck walks learners through effectively using their magnifiers by finding the sweet spot—the distance to hold the lens between eye and object so the object comes into focus. It also encourages learners to say observations out loud, and share discoveries. Finally, this card deck embraces technology by encouraging learners to use the magnifiers they probably already have in their pockets—their phones! **Please note:** Magnifiers can be dangerous if used to focus sunlight and start a fire. Be sure to provide clear boundaries to learners.

Target audience: This activity is best for learners 6-years-old and older, or younger learners with adult support.

Materials

- a printed copy of this document to refer to during the activity
- appropriate number of *Exploring Nature with Magnifiers* flip card decks for your organization (depending on how many learners you expect to use them)
- 2–3 magnifiers for the table (more for learners to borrow while they explore)
- some interesting objects from nature to engage learners in looking through a magnifier
- (optional) 1 printed activity sign
- (optional) 1 clear plexiglass menu stand to display the activity sign

Preparation

If this is your first time using Flip Cards, review *Flip Card Activities: Background Information* for more information on preparation, materials to support learners, and engagement guidance. That document has specific information about purchasing magnifiers. The following steps are our recommendations and should be customized for your site and program.

1. Decide whether to include an optional card.
 - a. Card 3b is optional in this deck. If you are providing learners with magnifiers with two lenses—one that has a bigger and less powerful lens and a second that has a smaller and more powerful lens—keep this card in the deck. Otherwise, remove this card.
2. Print sets of the Flip Card activity.
 - a. We recommend printing on cardstock and/or laminating for ongoing use.
 - b. Print each card in color, single-sided, actual size.
 - c. Cut each individual card to the 4" x 6" trim size. (Use the inner set of crop marks as your guide.)
 - d. Hole punch the circle in the top-left corner of each card.
 - e. Use a book binder ring ($\frac{1}{2}$ " to 1") to collate each card deck.
3. Try out this activity yourself! Your experience using this flip card deck in the space in which learners will use them will help you share specific examples and point learners to interesting things to look at.
4. Review and customize the Engagement Guidance (on the next page). Think about your space, your audience, the time you will have with learners, and how you might want to best engage them.
5. Gather some interesting nature objects to engage learners. If you are setting out several different Flip Card activities, you could use the materials gathered for those card decks (e.g., flowers, lichen). It can be fun to choose something such as leaves with tiny hairs so learners will have the experience of immediately seeing something they wouldn't have otherwise seen.
6. On the day you will be sharing this flip card deck with learners:
 - a. (optional) Place the large activity sign on the menu stand on the table. (The activity sign is a large version of the first card in the deck.)
 - b. Place sets of the Flip Card activity on the table. If you're not using the large activity sign, place the first card of each set facing up. If you are using the large activity sign, place the second card of each set facing up.
 - c. Place the interesting objects and the magnifiers on the table near the flip card decks.

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Preparation and Engagement Guidance (continued)

Engagement Guidance

Here is an example of how you might engage learners at the beginning of their experience when they first show interest in an activity, as well as after they complete the activity. The first time you use the *Exploring Nature with Magnifiers* activity, we recommend trying out some of the suggested language (in italics, below) and then customizing it.

Magnifiers can be a little tricky to introduce to learners. Often, learners will just want to take a magnifier, without any guidance. They may quickly get frustrated if they can't figure out how to focus or bored if they don't know what to look at. We've intentionally included the use of magnifiers in each of the Flip Cards to encourage learners to use magnifiers in specific ways, and it's also okay if learners just want to figure it out themselves. Sharing how to find that sweet spot—by holding the magnifier up to your eye and then moving your whole head/body until what you are looking at comes into focus—is probably the most important tip to share with eager and novice magnifier users!

At the beginning:

- Invite learners to use the magnifiers to look at your sample objects.
 - *Do you want to try using a magnifier to look at this [leaf, acorn, etc.] closely?*
 - *Make sure the lens is very close to what you're looking at and your eye is very close to the lens.*
 - *When the object comes into focus say, "Whoa!"*
 - When in focus ask, *"What do you notice?"*
 - *If you're interested, you can check out other animals, leaves, flowers, lichen, etc., and use this flip card deck to help guide your exploration.*

At the end:

- Ask some reflective questions, such as:
 - *What did you discover?*
 - *Did anything surprise you?*
- Listen and ask follow-up questions as appropriate.
- If learners describe looking at an object for which there is an activity, invite them to use their magnifiers with another Flip Card activity.
 - For example: *Sounds like you were really getting into looking at a flower with your magnifier. If you like, you could use your magnifier with the Exploring Flowers activity to explore flowers more.*

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Card

Citation

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