

Guidelines for Discussion

FROG AND TOAD TOGETHER

"The Garden"
by Arnold Lobel

Causes and Explanations

"The Garden" is a story about causes and causal explanations. Discussing it with your students can be an informal introduction to the philosophy of science.

Causes are the reasons that things happen. Effects are consequences of causes. For example, the sunshine causes plants to grow. The effect is that plants grow. Of course, there are many other possible effects of the sun shining — puddles may evaporate, or perhaps people become cheerful. Similarly, other things may contribute to causing plants to grow — rain, good soil, careful tending. Sometimes we use the analogy of a person giving an order as a way of explaining cause and effect. For example, a conductor raises the baton, signaling the orchestra to begin. The baton's movement becomes the command which causes the music to begin.

The idea of a causal agent as a commander finds expression in the English idiom, "A tells B to C." Warmer temperatures in spring "tell" a tree to send out leaves; colder temperatures in the fall "tell" a tree to shed its leaves. Pushing the typewriter's tab key "tells" the print mechanism to advance to a certain spot; it also "tells" the print mechanism to stop there.

The Wise Owl questions are divided into four categories. As class discussions deepen, you may find that these categories overlap and illuminate one another.

What is telling? (Questions 1 and 2)

Sometimes we tell things to other people. In "The Garden" Toad tells his seeds to start growing. Is language the best way to "tell" things what to do? Wise Owl Questions 1 and 2 invite reflection on this "tell" idiom. It is very important not to give your students the idea that the sun and the alarm clock don't really tell us to get up ("We just talk that way"). To be sure, what "telling" amounts to when the sun comes up, or the alarm clock rings, is rather different from when a person tells us something. But we need to reflect on both the similarities and the differences between what it is for the sun and the alarm clock to tell us something and what it is for a person tell us something.

What causes fear? Who or what is afraid?

(Questions 3, 4, 5, and 6)

We tend to believe that things in nature don't have thoughts and feelings the way human beings do. There is, however, a whimsical connection between cause and effect relationships in the natural world and psychological explanations for thoughts and feelings in the human world. The connection is this: If seeds can be told to grow (as indeed they can, though not, as Toad tries to do, by shouting at them), then perhaps they can also be frightened. This whimsical connection invites us to reflect on what sorts of entities (plants? animals? people?) are really subject to fear, and for those which are, how their fears can be calmed.

What is patience?

(Questions 7 and 8)

Toad's impatience introduces, implicitly, the question of patience. Obviously, Toad lacks patience. We tell children all the time to be patient, but what exactly is patience? Although "patience" is a word that we use often, it is valuable to think along with children about what patience is, how we know when somebody has it, and when we might want it. Saying in some helpful way what patience is turns out to be as difficult as it is important.

What causes things to happen?

(Question 9)

"The Garden" builds up to a humorously provocative conclusion ("It was very hard work.") that raises the main question of the whole story: How do we tell what is the true cause of some event? Certainly we cannot explain causality by establishing that B comes after A. Night comes after day, but it is not caused by it. Just because the rains come after you've done a rain dance doesn't prove that the dance caused the rains. The Latin expression for "after this, therefore because of this" — *post hoc, ergo propter hoc* — is the name of a basic fallacy in scientific reasoning.

Even a young child will laugh at Toad's concluding comment. What this suggests is that even a young child has at least some limited grasp of the fallacy involved in reasoning *post hoc, ergo propter hoc*. We need not introduce children to the Latin name for this mistake in reasoning, but it is a concept they can understand and it is worth getting clear about. To increase the child's understanding of this fallacy, we need to reflect together on how to determine what really is the cause of what.

SAMPLE DISCUSSION

Following is a transcript of a discussion that occurred during the try-outs of the Wise Owl questions. This dialogue provides examples of the way young children think and of the guidance teachers may offer.

Question 9 — A,B,C

When little green plants finally come up in Toad's garden, Toad says that making them grow was "very hard work."

- A. Is Toad's hard work really what made his seeds grow? How do we know?
- B. Think of some examples in which trying hard to make something happen really does make it happen.
- C. Think of some examples in which trying hard to make something happen doesn't even help to make it happen.

Teacher: Is Toad's hard work really what made his seeds grow?

Suzanne: No!

Becky: No!

Timothy: No way!

Teacher: How do we know that?

Suzanne: Because people can't make things grow! Sun makes seeds grow!

Trevor: Yeah. Sun and water. And air, I think.

Becky: But people can make things not grow.

Teacher: How?

Becky: Well, if you don't give the seeds any water or if you make it so the sun can't get in, like if you put a black box over them, and if you don't let any rain fall on the seeds, then you can make them not grow.

Tim: Yeah. Right, Becky.

Teacher: I see what you're saying. There are things we can do or not do that may have some effect on whether or not the seeds grow. For example, if we plant seeds in nice rich soil, where there's plenty of exposure to sun and rain, then maybe our hard work does help them to grow?

Trevor: Sort of. Maybe. But you don't help it grow. *It* grows. It grows by its own self, I think.

Teacher: Let's get back to Toad for a minute. Is it his hard work that makes the seeds grow?

Sam: No! Because he didn't do the things that the seeds need. They don't need company or reading books. Or something else he did...oh, the candles. They don't need candles. So his work wasn't really a help.

Gretchen: Well, Maybe the candles helped because they make light.

Trevor: But it wasn't sunlight. I think it has to be sunlight.

Gretchen: No, it doesn't.

Teacher: Well, let's think of some examples where trying hard to make something happen really does make it happen. Who can think of an example of when trying hard to make something happen really does make it happen?

Ben: Well, with my swim team, last Saturday we wanted to beat the other team, and we all tried really, really hard to swim the fastest we ever swam, and we won!

Suzanne: I have one. Me and my sister made my father's birthday cake Tuesday. Chocolate. And we wanted to get all the lumps out when we were mixing it. So my mother said, "Keep trying. They'll come out." So we took turns mashing the lumps up against the sides of the bowl, and finally the lumps were all gone.

Notes:

Trevor: Or like when I learned to ride my bike. First I couldn't ride. Then I worked hard so I could ride it straight. Then I couldn't do corners. So I practiced until I could do corners, you know, turning.

Teacher: OK, how about some examples of when trying hard to make something happen doesn't even help to make it happen?

Tim: You can't make it be Christmas! I wish it was Christmas every day!

Becky: Yeah. It's the same thing with my birthday. I wish it was always my birthday. I wish it was always my birthday. But I can't make it August 28 faster just 'cause I want it to be.

Teacher: What if you made a cake and got some candles and decorated the table with party plates and hats and napkins and then invited friends to your birthday? Then could you make it happen, if you tried really hard to make it happen?

Becky: No! It wouldn't be my real birthday!

Sam: You have to have the time pass. And you can't make time go faster. It's one day, and the one day, and then one day. You just have to wait.

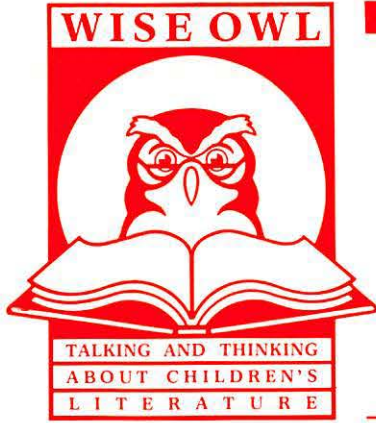
Teacher: What if I set the clock ahead, or change the date on the board? Won't that change the time? Or change what day it is?

Trevor: No! That's faking it. You can't make something like that happen. You just can't.

Teacher: Why not?

Trevor: Simple. Because you can't.

Becky: Yeah.



The Garden

Wise Owl Questions

1. Toad tells his seeds to start growing.

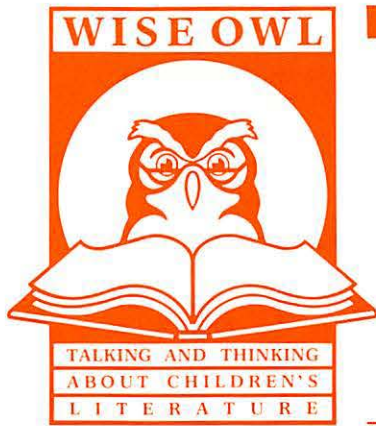
Sometimes your mother tells you to get up in the morning.

Sometimes the sun tells you to get up.

Sometimes the alarm clock tells you.

- A. Sometimes your mother forgets. Could the sun forget? How? Why not? Could the alarm clock forget? How?
- B. Sometimes your mother makes a mistake. Could the sun make a mistake? Could the alarm clock make a mistake? How?
- C. Sometimes you misunderstand what your mother is saying. Could you misunderstand what the sun tells you? Could you misunderstand what the alarm clock tells you? How?

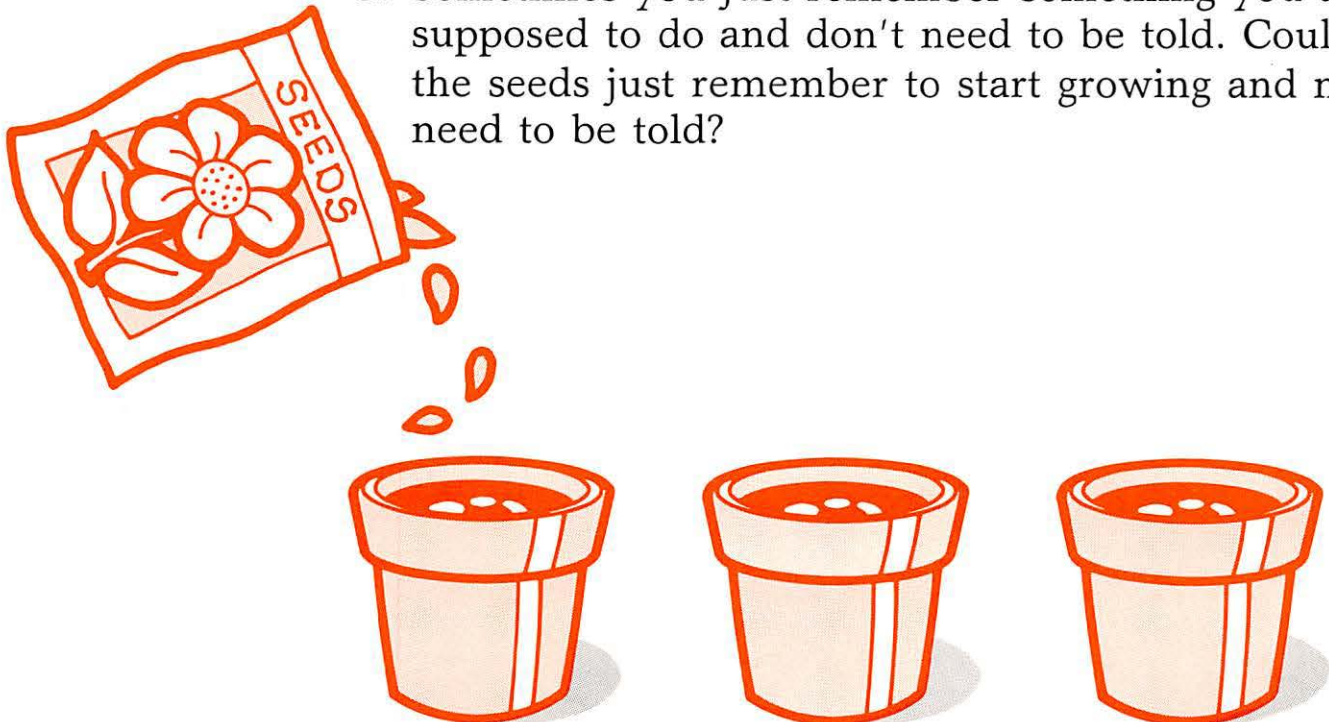




The Garden

Wise Owl Questions

2. Instead of saying to his seeds "Start growing!", Toad should have watered his garden. Watering the garden tells the seeds to start growing.
- A. As a baby, you don't know what words mean. You have to learn what words mean. Do seeds have to learn what watering the garden means?
- B. Sometimes you misunderstand what people tell you to do. Maybe your father tells you to go to the door, meaning the front door, and you go to the back door instead. Could the seeds misunderstand what watering the garden tells them to do?
- C. Sometimes you just remember something you are supposed to do and don't need to be told. Could the seeds just remember to start growing and not need to be told?





The Garden

Wise Owl Questions

3. Frog tells Toad that his shouting makes the seeds afraid to grow. What are some of the things your brother or sister or friend might be afraid to do?

Grow?

Go to sleep?

Wake up?

Eat?

Stop eating?

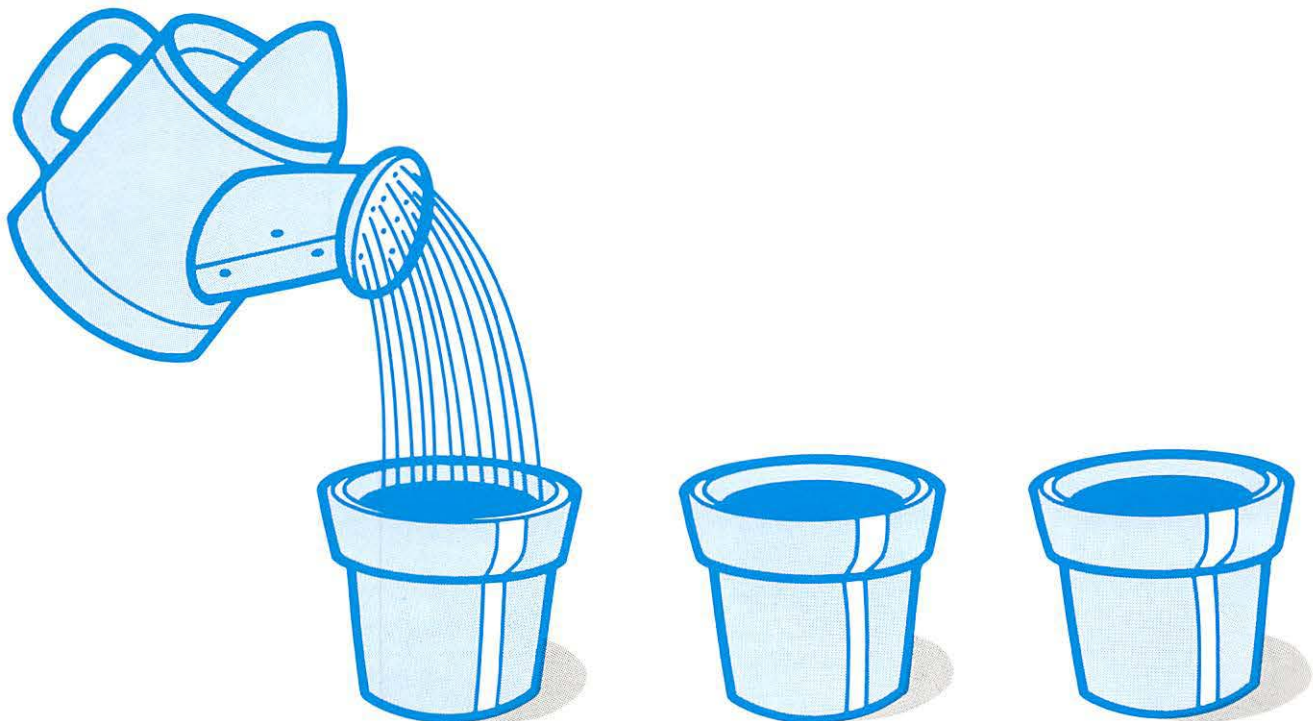
Talk? (When?)

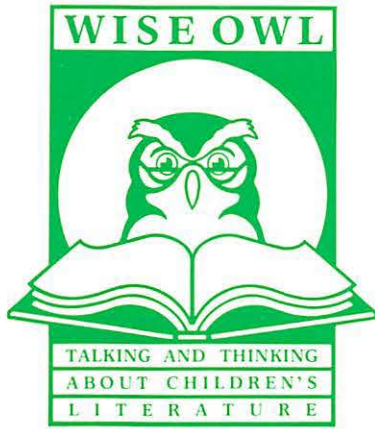
Stop talking? (When?)

Look? (When?)

Think? (When?)

Make a noise? (When?)





The Garden

Wise Owl Questions

4. Toad thinks his seeds are afraid of the dark. Which of the following can be afraid?

Flowers?

Horses?

Babies?

Fish?

Rabbits?

Grownups?

Dogs?

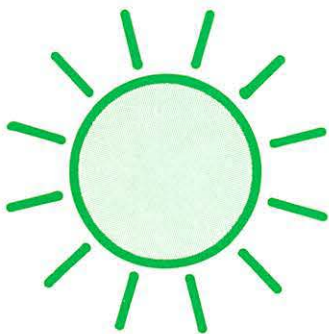
Birds?

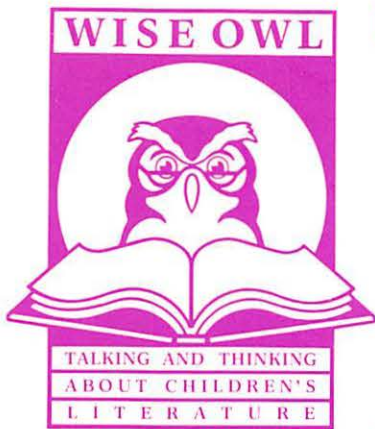
Grandparents?

How can we tell whether flowers, fish, or dogs can be afraid?

Horses, rabbits, or birds?

Babies, grownups, or grandparents?





The Garden

Wise Owl Questions

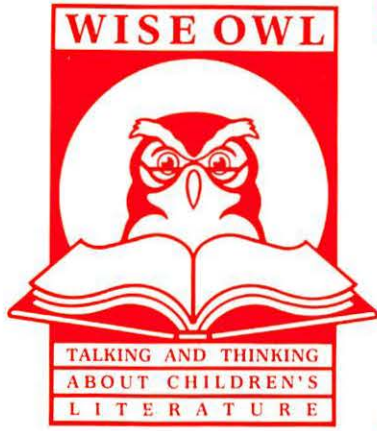
5. Toad reads a story to his seeds to keep them from being afraid.
- A. Does hearing a story sometimes make you less afraid? Why?
- B. Does watching TV sometimes make you less afraid? Why?

Does watching TV sometimes make you more afraid? Why?

- C. Are there people who are never afraid?

What might keep someone from ever being afraid?





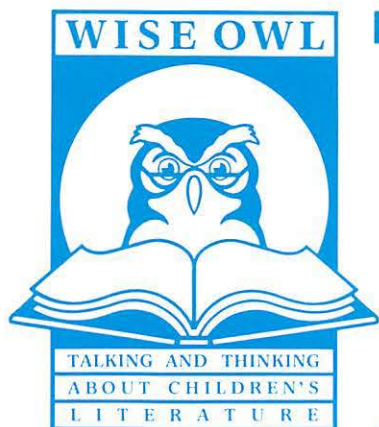
The Garden

Wise Owl Questions

6. Sometimes it's a good thing to be frightened.

Think of a case in which it first seemed bad that you got frightened, but then it turned out to be good.





The Garden

Wise Owl Questions

7. Toad doesn't have enough patience to wait for his seeds to grow.
- A. What is patience?
 - B. Can you tell whether someone is patient by how the person looks? Or, do you have to see how the person behaves?
 - C. Can you know whether you are patient by how you feel? Or, do you have to wait and see how you behave?
 - D. Think of someone with a lot of patience. Think of someone with very little patience. Why do some people have more patience than others?
 - E. Think of a situation in which it is important to have lots of patience. Think of a situation in which it is better not to have much patience. How do we know how much patience we should have?





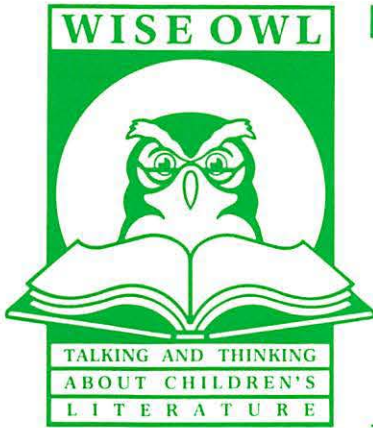
The Garden

Wise Owl Questions

8. What is patience more like?

Being brave—or being good-looking? Why?
Being quiet—or being strong? Why?
Being lazy—or being hard-working? Why?

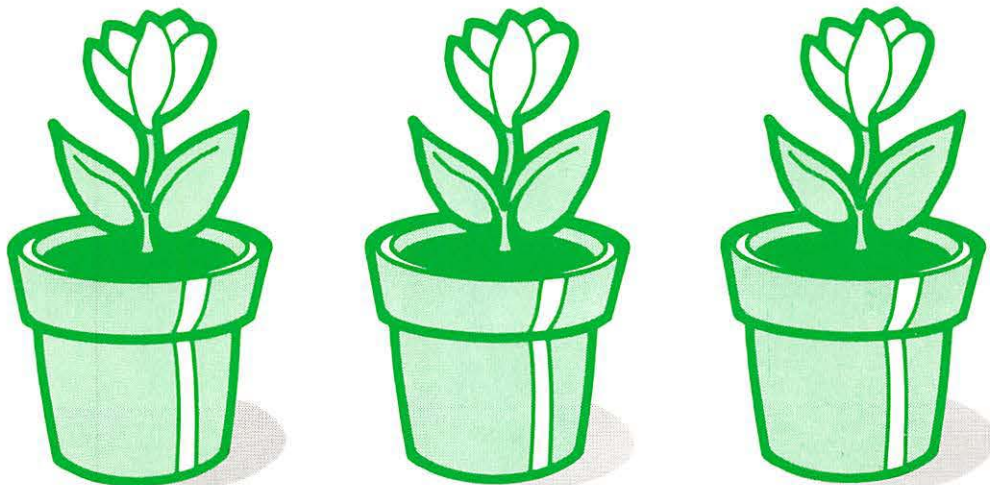


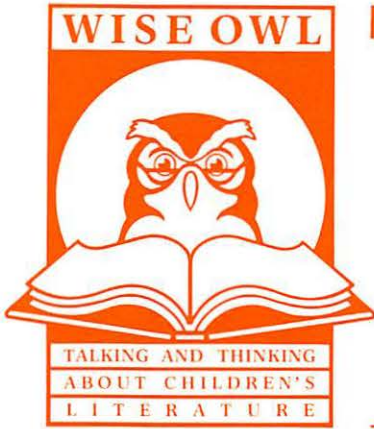


The Garden

Wise Owl Questions

9. When little green plants finally come up in Toad's garden, Toad says that making his seeds grow was "very hard work."
- A. Is Toad's hard work really what made his seeds grow? How do we know?
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The Garden

Wise Owl Questions

10. MAKE UP A STORY — EXTENSION ACTIVITIES

- A. Make up a story in which Laura does all sorts of things to make her cactus bloom. When it finally does bloom, she tries to find out what actually made it bloom.
- B. Make up a story in which Arnie tells people he can make things happen by writing them down in a book. Each thing he writes down in the book happens about two weeks later.
- C. Make up a story in which Ann insists that lightning causes thunder because every time the lightning flashes there is thunder later on. Sam tries to convince Ann that lightning doesn't cause thunder.

