



Lesson 2: What is a Watershed Quest?

Focusing Question: *What is a watershed quest?*

Overview: Students are introduced to a sample watershed quest to learn what a quest is, what the core components of a quest are and which products they will be responsible for creating.

Materials:

- Copies of the sample quest, including the Quest for the Source
- Map and clues (student sheet #1)
- Reflecting on the Quest (student sheet #2)
- Annotated Quest for the Source Map and clues (teacher sheet #1)
- Reflecting on the Quest Answer Key (teacher sheet #2)
- History of Questing (teacher sheet #3)
- Access to the "virtual watershed quest" at www.kqed.org/ednet (optional)

Length of time to complete: 45-60 minutes

Background: It can be difficult to make something if you don't know what it is. Therefore, it is very helpful to clarify for your students: (a) what a quest is, (b) the core components of a quest and (c) the products that they will create.

"Wisdom sits in places," writes anthropologist Keith Basso, quoting an Apache elder. **Places** are physical spaces in which particular elements are gathered, where unique things have happened and about which stories linger.

No matter where you live, your community is full of interesting **places**. As you begin to investigate, you will discover that each place consists of smaller elements (or **pieces**) that nest together into larger discernable **patterns** and that these patterns reveal **processes**: the stories of your

community. The stories might be geological or they might be geographical, and they can include stories of human movement and settlement, stories of distinctive neighborhoods, stories about the beginnings of industries, and stories of native flora and fauna. For example: “There is a natural depression here where rainwater and snowmelt collect and amphibians lay their eggs—a vernal pool.” Or: “All the buildings here are made of brick and date from the 1830s and 1840s. When you pick up a handful of earth from that hillside, it feels like clay—here was our community’s brickyard.”

Procedures:

1. Introduce the historical background of questing. (10–15 minutes)

- a. First ask students to think about a favorite, special place for them. This might be a place in their neighborhood, a place they go every summer and so on. Give them a minute or so to reflect in silence.
- b. Invite several students to briefly share and describe their special place.
- c. Introduce **James Perrot, of England**, and the history of questing. Use the information found on the History of Questing teacher sheet.

2. Hand out the student sheet *The Quest for the Source*. (25–35 minutes)

- a. Introduction: This quest in San Francisco explores a watershed. Let’s read through the quest together, aloud, one stanza at a time, to learn what a quest is.
- b. Students take turns reading through the quest and tracing their “movement” using the map.
- c. OR: Read through the quest while using the virtual quest at www.kqed.org/ednet

3. Reflect back on the core components of a quest. (10 minutes)

Every quest must include:

- a. The **Quest Map**, made up of (see annotated Quest Map):
 - a site map, with landmarks and key streets/intersections.
 - a compass rose, indicating north.
 - a decorative border featuring site details and inhabitants.Your map might also include a key, its scale and so on.
- b. **Directions** to the quest’s starting point.
- c. A title for the quest.

- d. Movement and teaching clues (see annotated Quest clues):
 - Movement clues guide visitors from one point to another.
 - Teaching clues help tell the particular story of that site.
- e. A **treasure box** at the end, featuring:
 - a sign-in book.
 - a project scrapbook or field guide.
 - a stamp pad.
 - a unique hand-carved stamp applicable to the story of your chosen site.

Note: Some quests, especially in frequently visited urban environments, might be better served by the treasure box being placed in a secure location (e.g., a library) or by being box-less and ending at a sign or plaque at which the visitor can take a rubbing.

4. Review the products that each participant will make.

Everyone will:

- contribute a piece of the map (both a border element and a landmark).
- contribute to a movement clue.
- contribute to a teaching clue.
- contribute to the creation of the treasure box and other products (e.g., two people work on the compass rose, two on the stamp, two on the sign-in book, etc.).

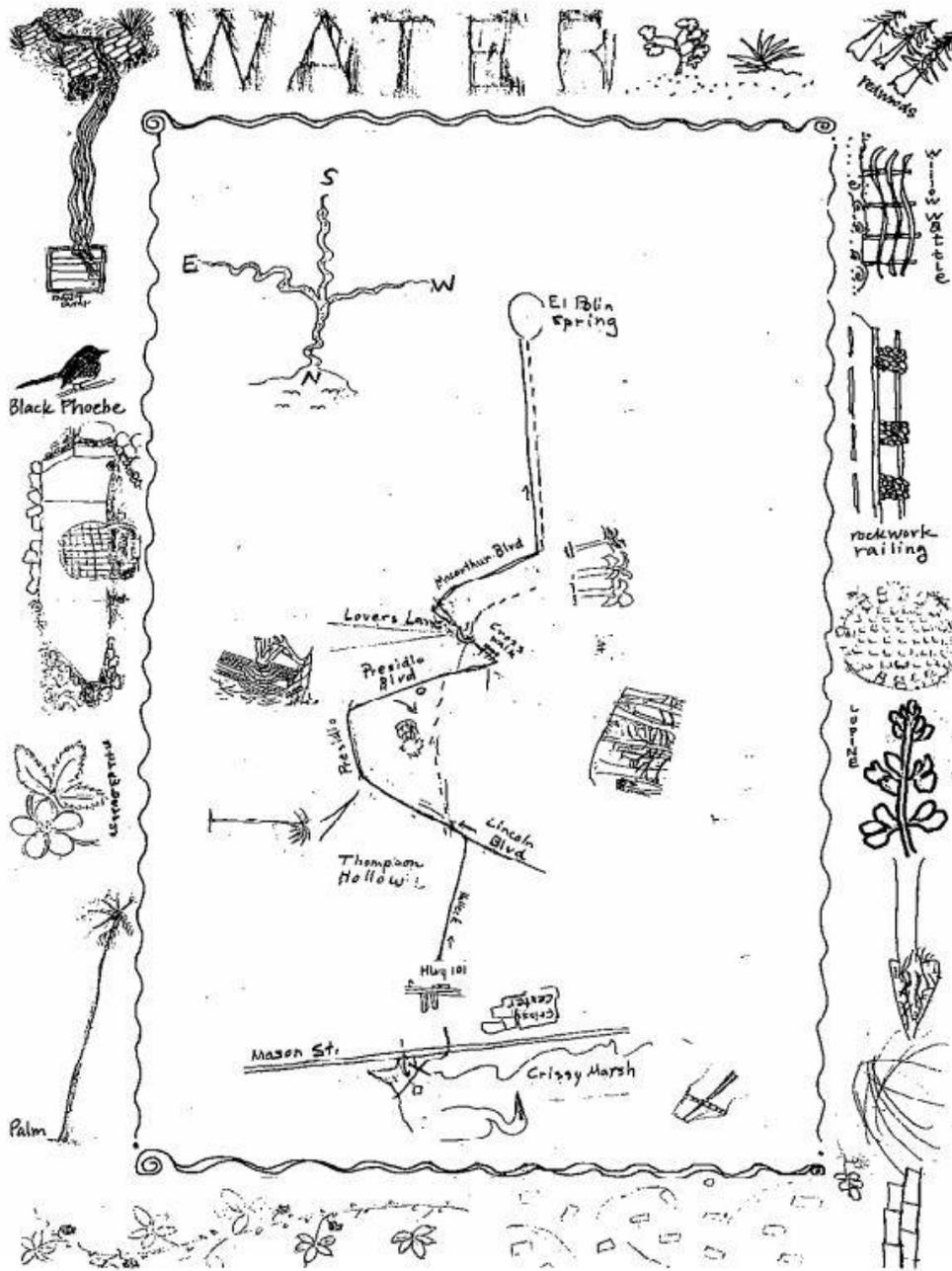
Homework: Have students reflect on the content contained in the Quest for the Source Map and clues by having them complete the Reflecting on the Quest student sheet. (20–30 minutes)

Evaluation Rubric:

PRODUCT	Unacceptable	Beginning to progress	Getting closer	Meets standard	Exemplary
Reflecting on the Quest Worksheet	0-9 points	10-13 points	14-15 points	16-17 points	19 points or more

Sample Quest

Quest for the Source Map: This sample quest was created in February 2006 during a workshop sponsored by KQED Public Broadcasting and held at the Crissy Field Center in partnership with the Presidio of San Francisco.



Quest for the Source: A Watershed Adventure

How to get there: This Quest begins at the Crissy Field Center, 603 Mason Street, in the Presidio of San Francisco (415.561.7690). Head North on Van Ness Avenue; turn left onto Bay Street, and then right on Laguna to Marina Blvd. Follow Marina Blvd. past Marina Green, and bear right into the Presidio. You'll be on Mason Street, and Crissy Field Center is on the left, at the corner Halleck.

Follow the clues to find our treasure!

Begin this Quest at the Crissy Field Center

Go straight down the steps.

Count 24 cracks.

Turn toward the Bay,

With a noisy freeway at your back.

Where wheelchairs can roll

You'll cross at the stripes.

Look both ways

To make sure the time is right!

A sandy path,

Lined with lupine?

We hope you wore a hat...

Cause these seagulls like poopin'!

Swing open "nature's gate"

And walk to the station.

Face the Golden Gate

And read the information.

1. So: What is a watershed?

There's lots of water out in the ocean.

But can you also find water up in the sky?

Water circles around in perpetual motion:

Liquid, vapor, raindrops, then life—oh my!

As the water moves across the land

It follows gravity's law, down, down

Collecting in streams and continuing on

Until at last, the ocean is once again found.

2. Where stream meets the sea

Quick! Turn around.
Spy a creek's outlet.
Here, fingerling fish
Feed a white Great Egret.
Hungry birds use
All of their stealth
To catch the saltwater fish
Who come here for their health.
Freshwater that flows
To this marsh from the springs...
Much food for this habitat
The detritus* brings.
* *Decaying plant matter*
That makes fish fatter
Freshwater in salt?
The **native** garden I see?
What is the source?
Who did all this for me?
Let's follow along
And walk the course
Following that **culvert** back up
To its freshwater source!

3. Quick, follow that culvert!

Head up the street, pass under the freeway
Stay on the sidewalk: concrete, stairs, & then wood.
"General Halleck" begins our
Civil War theme Have you found the president yet? Good!
There's a tall lovely palm tree
To the East, down the line.
Walk in that direction
Stopping at the "Fill Site" sign

4. Restoration: Day-lighting a buried stream

Fill removed, the volunteers gather.
Digging & planting...all are delighted
To see that this once filled-up stream
Has now been **day-lighted!**
Restoration project, **riparian** zone,
Meandering stream—all part of a system.
Supporting so much life—for so many a home—
So many seedlings, you can't even count them.
* *Volunteers helped plant 40,000 here in the winter of 2006*

5. Impediment to water flow: pavement

Pass historic palm number 1618.
Go across the street to your right.
In the parking lot straight ahead
Look for trees, in asphalt bound tight.
(How do you think that feels?)
Continue past the call box
Follow the sidewalk where the arrow bears right
Keep going and you will find it.
Move with the cars, the stop sign's in sight.

6. Other forces affecting the water's flow

A carved "bowl" to the right has a bottom of dirt.
Invasive clover is all around.
New plantings are close to your feet—
Not native, but meant to beautify the ground
Southwest down Presidio Boulevard
Past all kinds of manhole covers, you can see.
Slowly count these metal covers up to 6
Then on your right a cypress grove will be.

7. Signs of our stream

Look at this cluster of all types of trees.
They must have water in order to grow!
This grove is a clue to our mystery
And though you can't see it, water's there below.
A hidden path lies just out of sight
Uphill past 2 lamp posts
Cross to the left—not to the right.
Stroll down toward the historic brick bridge
Down "Lovers' Lane" to blackberry bramble
Soldiers once walked here on their trips downtown
Careful, it's steep, so don't run—just ramble.

8. Our stream surfaces again!

Eucalyptus and berries, both placed here by man:
Non-natives are thriving, so what do we think?
Invasives grow here with no competition...
So easy to grow with plenty to drink!
Through a concrete **channel** the stream emerges
This creek can't meander as it might be wishing
Blocked by the Army's concrete and bricks
Insects that prove good creek health are missing.

9. A beautiful day in the neighborhood

Walk toward the street and stay on the sidewalk
Turn right at the tall Monterey cypress tree.
As you stroll down MacArthur, notice
Grates on your left, and right, our sweet stream.

10. Hey! Where'd the stream go?

Keep on: turn left at two palms and a cypress
Walk up the street past five telephone poles.
At the sidewalk's end you will cross the street
To a **storm drain** that receives the streams flow.

Take a rubbing of the manhole cover near the stream. And the word on the cover?

11. Nearing the source

Stay on the path, bearing left, across wet cobbles.
See the steam meander through grass so green.
Cross a trickle once more, then ears open
For the gurgling sound of El Polin Spring.
Here, rainfall drains through sand dunes both young and ancient,
Then slows at the rock layer hidden underneath.
Water seeps through serpentine fractures and cracks
To emerge from the ground anew as a spring.

12. El Polin Spring

Drinking this water will yield lots of kids
Ohlone peoples and Spaniards believed.
In the 1800s the flowing stream
Helped the Army's thirst to be relieved.
Now El Polin Spring's mystical water
Runs through a trash dump uphill from this site.
But it's slurped by wax myrtle trees, sedges,
And Black Phoebes before they take flight.

You've walked our Quest from sea to source, & explored a watershed as a matter of course! If you peek behind the interpretive sign, You're Quest will be done...IT'S PARTY TIME!

Reflecting on the Quest

1. Where does this quest begin? _____

2. What is the source of this particular watershed? _____

3. What is the ultimate destination of this watershed? _____

4. Using your own words, describe how water "circles around in perpetual motion."

5. Name three native inhabitants of this watershed:

a) _____

b) _____

c) _____

6. Name three nonnative invasive species in this watershed:

a) _____

b) _____

c) _____

7. What are two ways that people have positively impacted this watershed?

a) _____ b) _____

8. What are two ways that people have, perhaps, negatively impacted the watershed?

a) _____ b) _____

9. Name three groups of people that have inhabited this watershed over time.

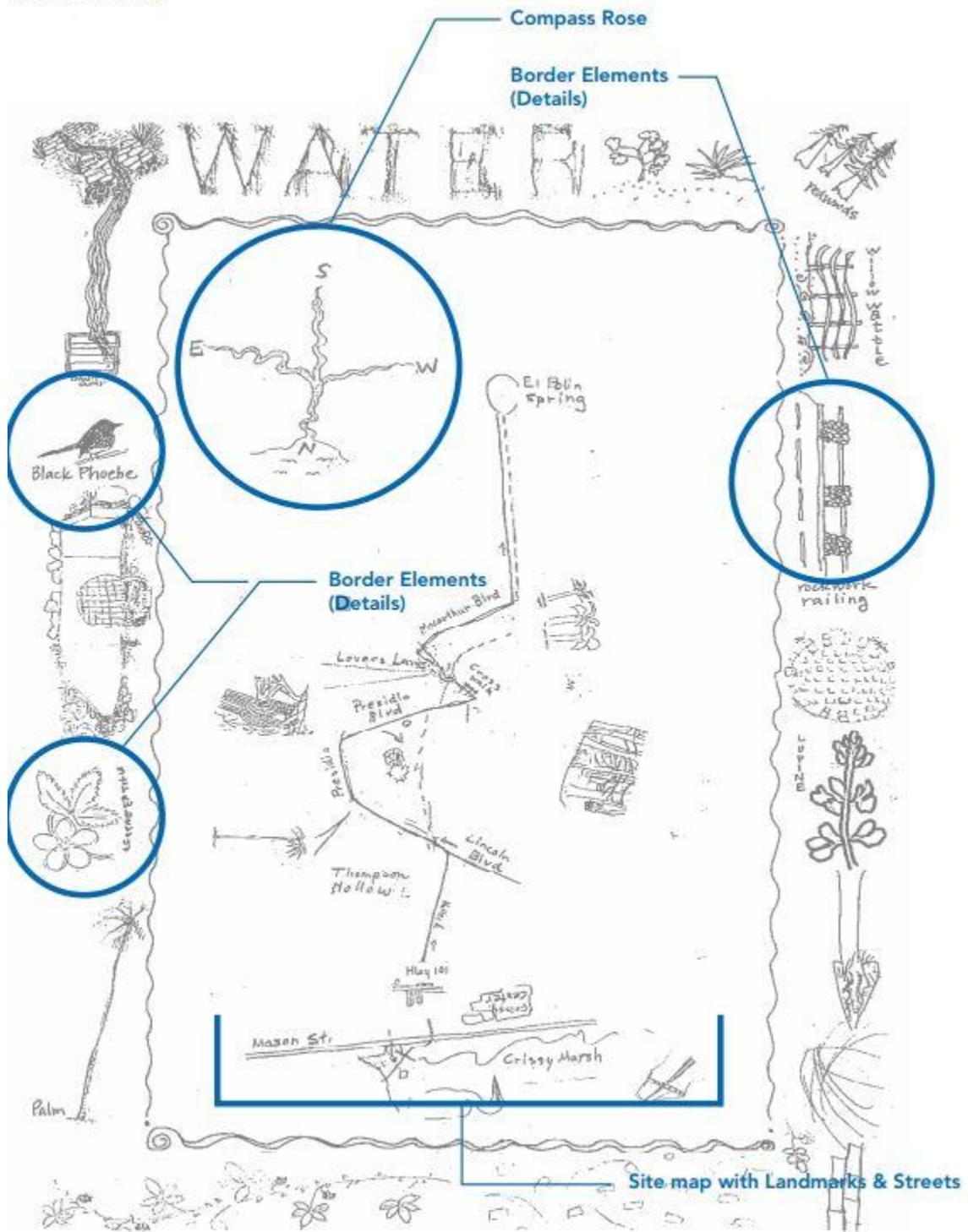
a) _____

b) _____

c) _____

Annotated Quest Map and Clues

Annotated Map



Annotated Quest Clues

Quest for the Source: A Watershed Adventure

Follow the clues to find our treasure!

Movement Clue

Begin this Quest at the Crissy Field Center

Go straight down the steps.
Count 24 cracks.
Turn toward the Bay,
With a noisy freeway at your back.
Where wheelchairs can roll
You'll cross at the stripes.
Look both ways
To make sure the time is right!
A sandy path,
Lined with lupine?
We hope you wore a hat...
Cause these seagulls like poopin'!
Swing open "nature's gate"
And walk to the station.
Face the Golden Gate
And read the information.

Movement Clue

1. So: What is a watershed?

There's lots of water out in the ocean.
But can you also find water up in the sky?
Water circles around in perpetual motion:
Liquid, vapor, raindrops, then life—oh my!
As the water moves across the land
It follows gravity's law, down, down
Collecting in streams and continuing on
Until at last, the ocean is once again found.

Teaching Clue

2. Where stream meets the sea

Quick! Turn around.
Spy a creek's outlet.
Here, fingerling fish
Feed a white Great Egret.
Hungry birds use
All of their stealth
To catch the saltwater fish
Who come here for their health.

Freshwater that flows
 To this marsh from the springs...
 Much food for this habitat
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 Freshwater in salt?
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 What is the source?
 Who did all this for me?
 Let's follow along
 And walk the course
 Following that **culvert** back up
 To its freshwater source!

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 Supporting so much life—for so many a home—
 So many seedlings, you can't even count them.
 * *Volunteers helped plant 40,000 here in the winter of 2006*

Reflecting on the Quest (Answer Key)

1. Where does this quest begin? Crissy Field Center
2. What is the source of this particular watershed? El Polin Spring
3. What is the ultimate destination of this watershed? San Francisco Bay / Pacific Ocean
4. Using your own words, describe how water "circles around in perpetual motion."
Ocean water evaporates → forms clouds → condenses → precipitation
→ rainwater falls → percolates into ground, rises up in springs; or gathers
into streams, rivers, lakes → ocean
5. Name three native inhabitants of this watershed:
 - d) Great egret
 - e) Monterey cypress
 - f) Black Phoebe
Also: Redwoods, strawberries, lupines, seagulls, wax myrtles, palms
6. Name three nonnative invasive species in this watershed:
 - d) Blackberries
 - e) Eucalyptus
 - f) Clover
7. What are two ways that people have positively impacted this watershed?
 - a) Daylighting the stream
 - b) Planting 40,000 seedlings
8. What are two ways that people have, perhaps, negatively impacted the watershed?
 - a) "Trees in asphalt bound tight"
 - b) Concrete channel
9. Name three groups of people that have inhabited this watershed over time.
 - d) Ohlone
 - e) Spaniards
 - f) U.S. Army

20 possible points (1 point per answer unless otherwise noted)

History of Questing

Questing was born out of a 150-year-old tradition in the region surrounding Dartmoor National Park in southwest England. Here, people—from toddlers and teens to parents and pensioners—don their Wellington boots and, following maps and rhyming riddles, traipse the moors in search of hidden boxes. “Letterboxing,” as the tradition is called, has become a popular pastime, with thousands of boxes hidden in natural and cultural locations.

Educator David Sobel witnessed this unique Dartmoor phenomenon while visiting the United Kingdom in 1987. He brought the letterboxing idea back to New England, where he helped to transform it into questing, a community-based, sense-of-place education program. Ten years later, student and community groups across Vermont and New Hampshire’s Upper Valley region have created more than 200 distinct quests. The quests lead to favorite trees, hilltop overlooks, forgotten cemeteries, historic villages, old mill sites, forests, wetlands and more.

Suggested Questing Introduction for Students

James Perrot’s favorite special place was Cranmere Pool, in Dartmoor, England. In the 1850s, Mr. Perrot left a “message in a bottle” out at Cranmere Pool. Actually, it was kind of like a Mason jar, with a stack of his calling cards in it. Sometimes people making the trek out the Cranmere Pool would find the jar, take a card, and later pay Mr. Perrot a visit. So at first, questing was an exchange—or relationship—among a few people sharing affection for a special site. Later, the bottle became a tin box, and calling cards were replaced, first with postcards and later with a guestbook. By 1908, there were 1,741 signatures in the book! Another hidden box was placed at Duck’s Pool in 1938. As time passed, other people began creating maps and clues leading to other hidden treasure boxes.

Question: How many boxes do you think are in and around Dartmoor today?

Answer: More than 5,000!

In the mid-1990s, a Vermont nonprofit organization, Vital Communities, brought this idea, now known as “letterboxing,” to the United States, but with a different goal: to have students and adults create “treasure hunts” to the natural and cultural treasures of their communities. The first Valley Quest box was planted in 1995, and today there are more than 200 quests (or community treasure hunts) across Vermont and New Hampshire.