

Research Route Map

Locate useful evidence through print, web, and database routes.

9.T.RA.2.a "Navigate and use a variety of credible print and digital sources, including academic databases, to locate relevant information about a central argument, topic, or question. (I)"

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline the three source routes in the guide. In paragraph 3, circle the details you must record for every selected work.

From a Question to Located Evidence

- ① Investigate this question: What information should a community use when considering trees for summer heat relief? Use three distinct works: a printed report, a government web page and a scholarly article found through an academic database. The source cards below are starting points, not substitutes for navigating and reading the originals.
- ② A printed report's contents page directs you to named sections and printed page numbers. A website's headings and links help you reach a relevant page. An academic database such as Europe PMC lets you search scholarly records, then follow a record to the article. A result's title alone cannot tell you whether its evidence answers your question.
- ③ For every selected work, record its author or agency, title, date, route and specific section or page. Read enough to identify a relevant finding and a limit. Distinguish a digital database record from the full article it describes. Two databases listing the same article do not give you two different research sources.

Source A

U.S. EPA. Reducing Urban Heat Islands: Compendium of Strategies, Trees and Vegetation chapter (2008 draft), section 4.2, printed p. 14.

<https://www.epa.gov/sites/default/files/2014-06/documents/treesandvegcompendium.pdf>

Editorial summary: This report has a contents page and numbered sections, including a section on tree maintenance. It is the print-source starting point.

Limits to examine: An older national guide is not a current local budget or site assessment. Printed page numbers differ from PDF viewer page numbers.

Source B

Ziter, C. D., Pedersen, E. J., Kucharik, C. J., and Turner, M. G. (2019). Scale-dependent interactions between tree canopy cover and impervious surfaces reduce daytime urban heat during summer. PNAS 116(15), 7575-7580. DOI: 10.1073/pnas.1817561116.

<https://europepmc.org/article/MED/30910972>

Editorial summary: A real scholarly record for a study of summer air temperature and land cover in Madison, Wisconsin. Use an academic database search to locate the record, then open the article.

Limits to examine: This is one city's study, not proof of a fixed cooling result in every community. The database record and article are the same work, not two sources.

2 ANSWER WITH EVIDENCE Use the passage and sources

- 1 What should your print-source record include to show that you located useful information, rather than only finding a title?

- 2 You find the same Ziter article in Europe PMC and another database. Does that satisfy two different source requirements? Explain.

- 3 Source B identifies the study's location as Madison, Wisconsin. Why does that location matter when deciding whether to use its findings for your community's question?

3 YOUR TURN

Your own words

Teacher preparation: provide access to a shared printed reference copy of the EPA chapter (including contents and printed p. 14), internet, and Europe PMC or a school/library academic database. Arrange these research materials before class. The worksheet is the activity record; the cited originals are research materials.

Carry out the four steps and complete the records below. Actually navigate the print report, a government website and an academic database; read the selected information before recording findings. Use three distinct works, not three links to one work.

1. Locate information in print

Use the EPA chapter's printed contents to find section 4.2. Read it. Record the agency, title, printed page, one useful finding and one limit. Do not copy the source card as your finding.

Print work, navigation, page, finding and limit:

2. Search an academic database

Open europepmc.org or your library database. Run a topic search such as tree canopy urban heat; record it, then refine with an author, title word or DOI. Select a relevant scholarly article, open its full text, and check authorship, journal and evidence. Record both searches, the selected citation or DOI, the section read, a useful finding and a limit. The Ziter paper is an available starting point.

Database, initial/refined searches, article, section, finding and limit:

3. Navigate a government website

Start at <https://www.epa.gov/heatislands/benefits-trees-and-vegetation>. Follow a relevant link, using the page navigation if needed, and read the destination. Record the agency, destination title, date if shown, navigation path, a relevant finding and a limit. Select a work distinct from the printed chapter and scholarly article.

Government work, route, section, finding and limit:

4. Use what you located

In three sentences, answer the research question by connecting findings from your three works. Name the works briefly and explain one limit on applying them locally. Your records must show actual retrieved evidence, not plans for later searching.

Evidence-based answer with a local limit:

PART 1 • READ AND MARK

Underline the three source routes in the guide. In paragraph 3, circle the details you must record for every selected work. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What should your print-source record include to show that you located useful information, rather than only finding a title?	Include the author or agency, title, date, navigation route (such as contents to section 4.2), named section and printed page, plus a finding and its limit.
2	You find the same Ziter article in Europe PMC and another database. Does that satisfy two different source requirements? Explain.	No. Those are two routes to the same article, not two distinct works. A separate government page and printed report are still needed.
3	Source B identifies the study's location as Madison, Wisconsin. Why does that location matter when deciding whether to use its findings for your community's question?	A finding from Madison may be useful but local climate, land cover or other conditions could differ. The location helps judge relevance and avoid treating its results as guaranteed elsewhere.

PART 3 · YOUR TURN (SAMPLE ANSWER)

Print record example: U.S. EPA, Trees and Vegetation chapter (2008 draft). Contents → section 4.2, printed p. 14. The section calls for adequate soil, water and regular early care. Useful for maintenance planning; it does not supply a local cost estimate.

Database record example: Europe PMC; initial search tree canopy urban heat; refinement DOI:10.1073/pnas.1817561116. Ziter et al., PNAS (2019), 116(15), 7575–7580, PMID 30910972. Full article, Abstract and Methods: researchers measured air temperature along Madison routes, finding that canopy relationships differed with scale and time of day. One-city findings should not be assumed identical elsewhere. Search results can change; accept another relevant article with a documented route. Government route example: EPA Benefits of Trees and Vegetation → Measuring Heat Islands. Updated March 10, 2026. Section: Considerations for Measuring Surface Temperatures. Satellite surface measurements and air measurements concern different quantities. Useful for choosing evidence; it is not a set of readings from our community.

Synthesis example: EPA's printed maintenance section makes ongoing care part of our planning, while Ziter and colleagues' study suggests considering canopy and surrounding paved cover together. EPA's Measuring Heat Islands page helps us distinguish surface data from the air measurements used in that study. The community needs evidence suited to its own conditions before choosing a design.

Require completed source records and actual navigation, including two database queries and a full-article section; a hypothetical source list is incomplete. Accept other credible scholarly articles with specific findings and limits. Confirm journal/review status at the publisher when unclear; database inclusion alone does not guarantee quality. The sample shows one valid route, not a fixed results ranking. Bibliographic model verified September 8, 2026; teacher checks student-selected originals. Keep the model's four records visibly separated.