Jefferson Lab

Treasure Hunt

Thomas Jefferson National Accelerator Facility - Office of Science Education
http://education.jlab.org/

Jefferson Lab Treasure Hunt

HOW MUCH DO YOU KNOW ABOUT JEFFERSON LAB?

Answer the questions below by:

- **Looking** at signs posted around Jefferson Lab
- **Watching** carefully during your tour
- **Listening** carefully to your guide

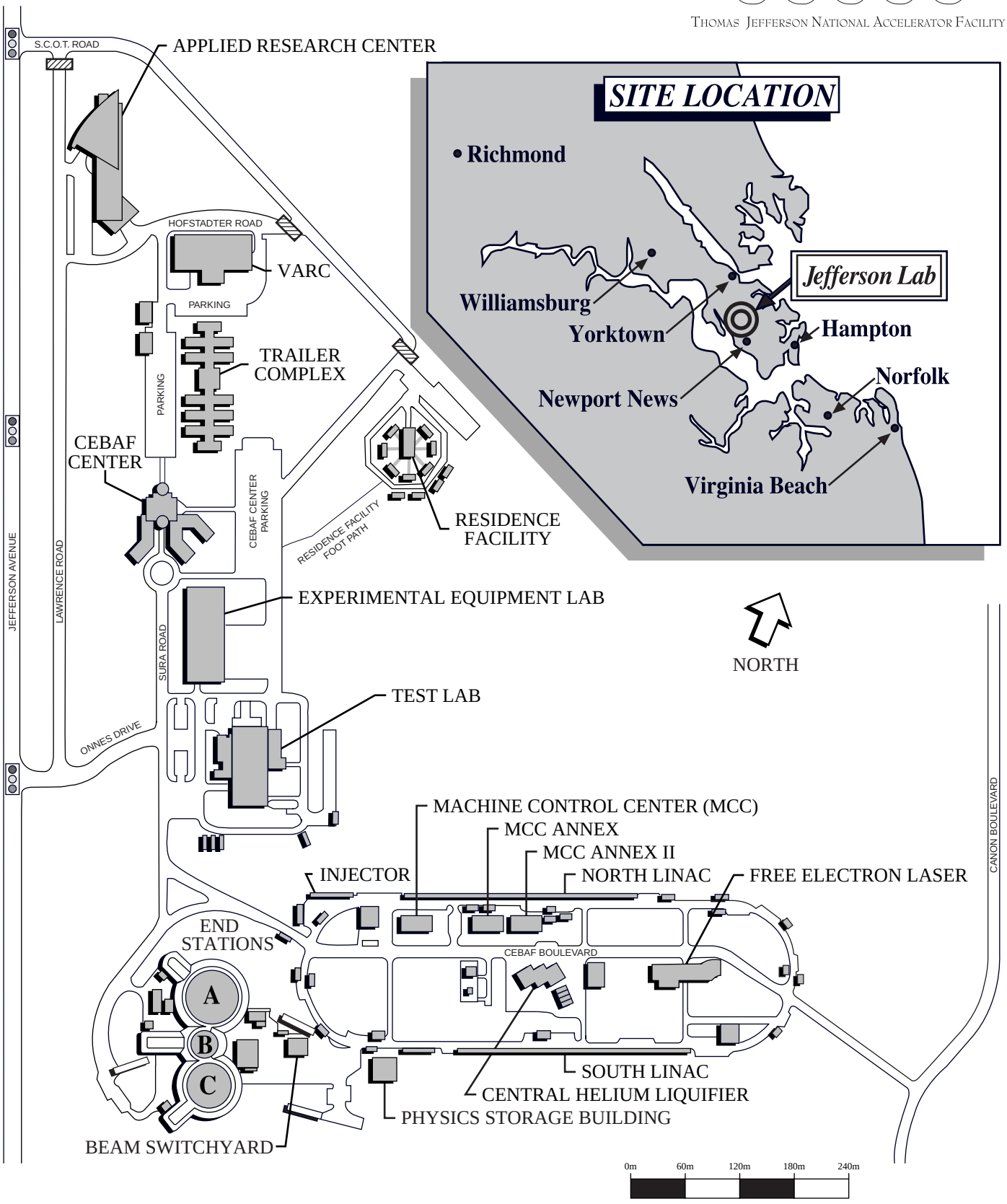
- What are Jefferson Lab's superconducting cavities made of?
- What is the name of the 'pink' building?
- Where is Jefferson Lab's cafeteria?
- Where can visiting scientists spend the night?
- How many end stations (or experimental halls) does Jefferson Lab have?
- Where does Jefferson Lab's electron beam get its start?
- What is the main job done in the Machine Control Center?
- What is liquid helium used for at Jefferson Lab?
- What new kind of laser is being used at Jefferson Lab?
- How far around, in kilometers, is the accelerator?
- What is a speed limit on the accelerator site?
- How many flagpoles are in front of CEBAF Center?
- What was Jefferson Lab's previous name?
- What did the letters in that name stand for?

SITE PLAN

U. S. Department of Energy's

Jefferson Lab

Thomas Jefferson National Accelerator Facility



Jefferson Lab Site Map Scale Activity

WHEN YOU WERE AT JEFFERSON LAB YOU TOOK A TOUR AROUND THE SITE. SEE IF YOU CAN ESTIMATE THE DISTANCES BETWEEN SOME OF THE PLACES YOU VISITED.

Directions: Use the scale on the site plan on the next page to calculate the shortest distance between each pair of buildings listed below. **Hint:** You can make a large ruler to help you measure the distances between buildings by copying the map's scale over and over again onto a scrap piece of paper.

1. Hall A and CEBAF Center _____
2. Injector and Machine Control Center _____
3. Hall C and Injector _____
4. CEBAF Center and VARC _____
5. Residence Facility and Trailer Complex _____
6. Hall C and VARC _____
7. Machine Control Center and CEBAF Center _____
8. Experimental Equipment Lab and Test Lab _____
9. North LINAC and Central Helium Liquifier _____
10. Applied Research Center and Free Electron Laser _____

SITE PLAN

U. S. Department of Energy's

Jefferson Lab

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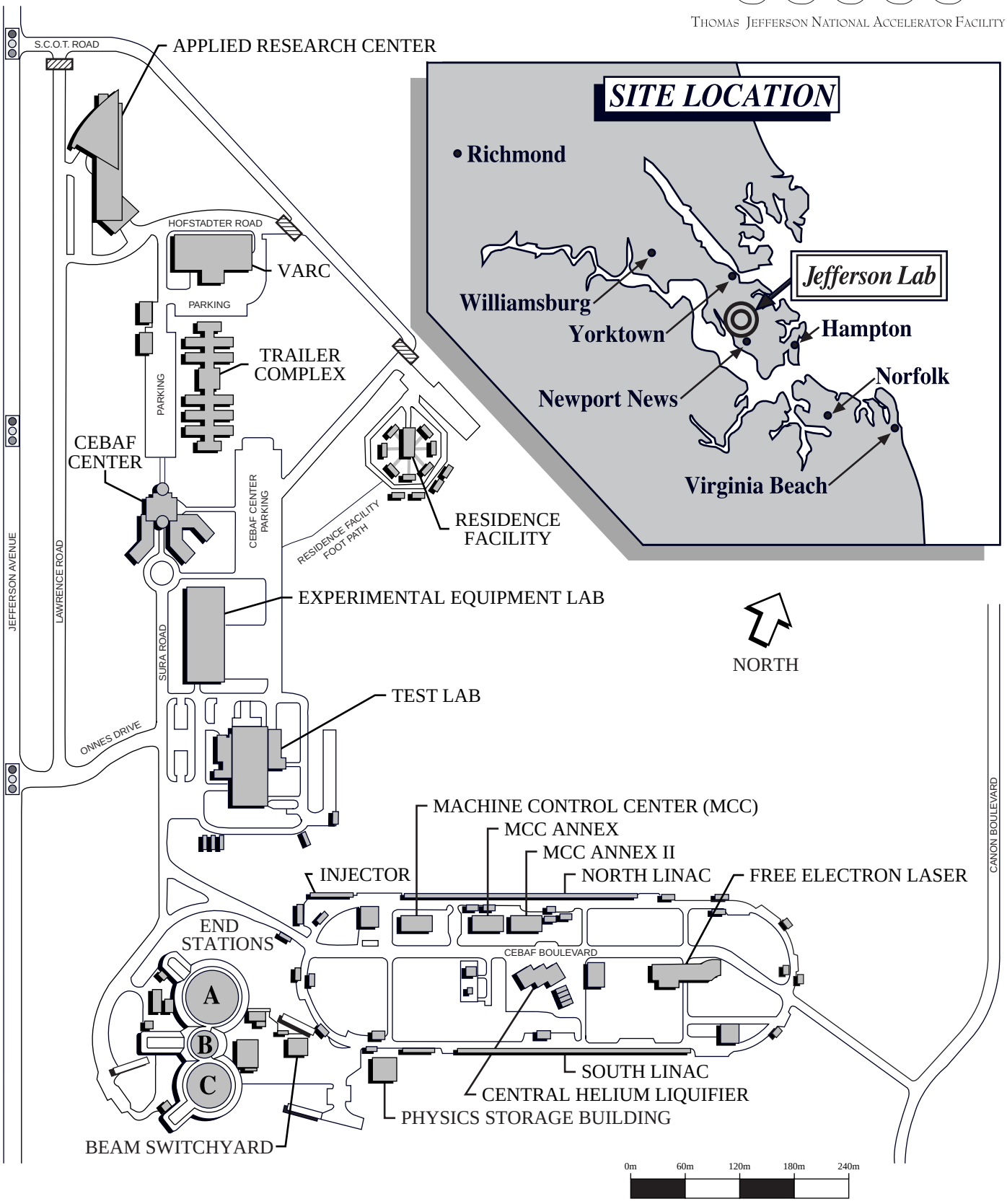

- What are Jefferson Lab's superconducting cavities made of?

Niobium

- What is the name of the 'pink' building?

Test Lab

- Where is Jefferson Lab's cafeteria?

CEBAF Center

- Where can visiting scientists spend the night?

Residence Facility

- How many end stations (or experimental halls) does Jefferson Lab have?

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- Where does Jefferson Lab's electron beam get its start?

Injector

- What is the main job done in the Machine Control Center?

Controlling the accelerator

- What is liquid helium used for at Jefferson Lab?

Makes the cavities cold

- What new kind of laser is being used at Jefferson Lab?

Free Electron Laser (FEL)

- How far around, in kilometers, is the accelerator?

1.4 km

- What is a speed limit on the accelerator site?

25 mph, 15 mph or 5 mph

- How many flagpoles are in front of CEBAF Center?

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- What was Jefferson Lab's previous name?

CEBAF

- What did the letters in that name stand for?

Continuous Electron Beam Accelerator Facility

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1. Hall A and CEBAF Center — ***~ 530 m***
2. Injector and Machine Control Center — ***~ 50 m***
3. Hall C and Injector — ***~ 250 m***
4. CEBAF Center and VARC — ***~ 270 m***
5. Residence Facility and Trailer Complex — ***~ 230 m***
6. Hall C and VARC — ***~ 900 m***
7. Machine Control Center and CEBAF Center — ***~ 530 m***
8. Experimental Equipment Lab and Test Lab — ***~ 50 m***
9. North LINAC and Central Helium Liquifier — ***~ 90 m***
10. Applied Research Center and Free Electron Laser — ***~ 1000 m***

Jefferson Lab Treasure Hunt

This is activity in which students take a tour of Jefferson Lab.

Objectives:

In this activity students will:

- tour Jefferson Lab
- collect information to answer questoins in the BEAMS Lab Book

Travel Book Activities:

- Jefferson Lab Site Map Scale Activity

Jefferson Lab Treasure Hunt
Teacher Overview and Materials List

Background:

The Thomas Jefferson National Accelerator Facility is a basic research facility built to explore the basic structure of matter. Jefferson Lab is operated by the Southeastern Universities Research Association for the United States Department of Energy. This activity gives students a chance to see more of Jefferson Lab.

Notes:

- Most of the student questions can be answered with our on-line tour of Jefferson Lab:

http://education.jlab.org/sitetour/