
Appendix B – Materials Checklist

This checklist will help you assemble and review your supplies for each session. Quantities of each item are not listed, as that will be determined by the size of your group. Additional details about the materials needed are available in the session write-ups. Information about sources for the materials is available in the materials spreadsheet on the *Afterschool Universe* website.

Session 1 – Modelling the Universe

- Universe Model Analysis Student Worksheets
- Examples of models
- Crayons/colored pencils/markers
- 8.5" × 11" white paper
- Construction paper and other craft supplies
- Large sheets of sturdy paper
- Scissors, glue, and tape
- (Optional) Clay or Plah-Doh

Session 2 – Cosmic Survey

- Cosmic Survey images (laminated or reinforced)
- Cosmic Survey Student Worksheets

Session 3 – Telescopes

- Telescope kits
- Rulers
- Rubber bands
- White or light-colored tissue paper
- Light source (clear light bulb or Maglite flashlight)
- (Optional) 3" square pieces of paper
- Postcards
- Stamps

Session 4 – Invisible Light

- The Electromagnetic Spectrum handout
- Flashlight
- Plain white paper
- Infrared light (heat lamp)
- Alligator jumper clip cables

- Photocell or solar cell
- Amplifier/speaker
- Audio cable
- Remote control(s)
- Digital camera or camera phone
- Ultraviolet lamp
- Invisible ink pens or other items which are sensitive to ultraviolet light (ultraviolet reactive beads, glow-in the-dark stars, credit cards, laundry detergent, etc.)
- Batteries (for flashlight, UV lamp, remote controls, and amplifier/speaker)
- Visible Light worksheet (for leaders)
- Invisible Light worksheets
- Pencils/pens
- Sheets of material to test (clear plastic, black plastic, aluminum foil, paper, cloth, wax paper, plastic bag, etc.)

Session 5 – Spectroscopy

- The Electromagnetic Spectrum handout
- Paper towel tubes (or other tubes)
- Aluminum foil
- Masking tape
- Diffraction grating
- Diagram of paper tube spectroscope
- Light sources

Session 6 – Stars and Their Lives

- Blackboard, whiteboard, or a flipchart on an easel
- Chalk or markers
- 8.5" × 11" sheets of cardboard or thick construction paper
- Two identical light sources
- The Lives of Stars handout
- Images of stars at different stages in their life cycles
- Scissors

Session 7 – Stars and Their Lives (Part II)

- Periodic table
- Clay
- Hotplate
- Heavy oven mitts or tongs
- Clear bowl
- Water
- Ice
- Empty soda cans
- Tennis balls
- Ping pong balls

Session 8 – Our Cosmic Connection to the Elements

- Poundcake
- Knife
- Gloves or wet wipes
- Paper plates
- Example of a pure element (copper tubing)
- Periodic table
- White rice
- Split peas
- Elbow macaroni
- Black beans
- Pink beans
- Colored sprinkles
- Large bowl
- Paper towels
- Plastic spoons
- Universe Trail Mix key
- Universe Trail Mix worksheet
- Elemental spectra handout
- Note paper

Session 9 – Galaxies

- Index cards
- Paper plates (or other round, flat pieces such as cardboard, or foam board)
- Scissors or box cutter
- Diagram of Milky Way galaxy arms
- Crayons/colored pencils/markers
- Yellow or red markers (or watercolor paint)
- Stickers of stars and circles/ovals
- Styrofoam balls
- Blunt cutter
- Toothpicks
- Rulers
- Hubble Ultra Deep Field image
- Image of types of galaxies
- Images of galaxies different orientations of spiral galaxies
- Blackboard/whiteboard or flip chart
- Chalk or whiteboard markers

Session 10 – Black Holes

- Blackboard/whiteboard or flip chart
- Chalk or whiteboard markers
- Round balloons
- Aluminum foil
- Balances/scales
- Cloth/flexible tape measures
- Student worksheet
- Index cards
- Approximately 20-foot length of rope (or yarn, jump ropes, etc.)

Session 11 – Visit from a Scientist

- Construction paper
- Glue
- Scissors
- Crayons/colored pencils/markers
- Decorative craft supplies

Session 12 – Modelling the Universe, The Sequel

- Universe Model Analysis Student Worksheets
- Crayons/colored pencils/markers
- Model construction supplies (construction paper, balloons, balls, marbles, string, straws, pipe cleaners, pasta, etc.)
- Large sheets of sturdy paper
- Scissors, glue, and tape
- Models from Session 1 (or photos of them)