

**Student:** 16 years old

**Subject:** Science / Art Integration

**Topic:** Air Dry Clay – Properties, Science, Usage, and Decoration

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## Day 1: Introduction to Air Dry Clay and Its Properties

**Lesson Title:** Discovering Air Dry Clay: What It Is and How It Works

### Learning Objectives:

- Define air dry clay and distinguish it from other clays (e.g., kiln-fired clay).
- Explain how air dry clay hardens and what affects its drying time.
- Identify the basic physical and chemical properties of air dry clay.

### Materials Needed:

- Samples of air dry clay
- Water spray bottle
- Plastic wrap or airtight container
- Worksheet for notes/observations
- Magnifying glass or hand lens
- Notebook / journal

### Lesson Introduction:

Begin with a discussion: “Have you ever made something from clay or play-dough? What happens to it when it dries or is left out? Why do you think air dry clay hardens without being baked?”

### Instructional Procedures:

- **Exploration:** Examine and feel the air dry clay sample. Use a magnifying glass to observe its texture. Keep a small amount wrapped and another exposed to air to note drying differences.
- **Explanation:** Introduce the composition of air dry clay (primarily clay, fillers, and binders) and explain moisture evaporation as the drying mechanism. Contrast this with kiln-fired clay that requires heat.
- **Application:** Try gently pressing the clay into simple shapes and observe how it remains pliable or dries over time. Spray with a bit of water to note effects on pliability.
- **Reflection:** Journal observations and discuss why clay dries and what might keep it moist.

### Assessment and Evaluation:

Informal quiz/discussion: Name one difference between air dry clay and kiln clay; explain why moisture matters.

### Integration with Other Subjects:

Discuss the science behind evaporation (physics) and chemical composition (chemistry). Write a short descriptive paragraph (language arts).

### Differentiation and Personalization:

For a visual learner, draw diagrams showing moisture evaporation. For kinesthetic learners, focus on hands-on manipulation of clay.

### Real-Life Applications and Field Activities:

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Invite the student to collect natural materials (e.g., leaves, bark) for pressing textures onto clay next lesson.

### Resources for Further Learning:

- Video: “How Does Air Dry Clay Work?” (YouTube Science Channels)
- Book excerpt: Basics of clay science from an introductory chemistry textbook

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## Day 2: Keeping Air Dry Clay Pliable and Making Slip

**Lesson Title:** Mastering Moisture: Pliability and Clay Slip

### Learning Objectives:

- Demonstrate how to keep air dry clay pliable and workable over time.
- Understand what slip is and how to prepare it from air dry clay.
- Learn proper storage methods to extend clay usability.

### Materials Needed:

- Air dry clay
- Water
- Mixing bowl
- Spoon or stirring stick
- Airtight containers or plastic bags
- Paper towels
- Slip demonstration worksheet

### Lesson Introduction:

Start with a question: “Have you ever had modeling dough that went hard too soon? What would you do to keep it soft?” Share that slip is like glue for clay.

### Instructional Procedures:

- **Exploration:** Try mixing a small batch of water with dry clay pieces to create slip — a wet clay “glue.”
- **Explanation:** Explain slip’s function in joining clay parts and repairing cracks. Discuss moisture’s role in maintaining pliability and preventing cracking.
- **Application:** Practice making slip to attach two clay pieces, such as joining two small coils to make a joint. Keep a worked piece wrapped in plastic to test pliability retention.
- **Reflection:** Discuss how varying water amounts impact the slip and pliability. Write a reflection note.

### Assessment and Evaluation:

Observe successful slip creation and joining of pieces. Question: “What might happen if you don’t add water to the clay?”

### Integration with Other Subjects:

Incorporate math: measure water to clay ratio when making slip. Writing: compose step-by-step instructions for making and using slip.

**Differentiation and Personalization:**

Visual learner: create a flowchart for slip making. Hands-on learner: repeat making slip several times with varying water ratios.

**Real-Life Applications and Field Activities:**

Explore recipes for homemade natural clay or play dough from online resources for comparison.

**Resources for Further Learning:**

- Video tutorial: “How to Make Clay Slip for Beginners”
- Article: “Storage Tips to Keep Your Clay Soft”

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**Day 3: Best Practices for Building with Appendages**

**Lesson Title:** Building Strong: Attaching Appendages to Clay Creations

**Learning Objectives:**

- Understand the importance of scoring and using slip for attaching appendages.
- Identify techniques to prevent cracks and weak points in air dry clay models.
- Demonstrate creating appendages and attaching them securely.

**Materials Needed:**

- Air dry clay
- Clay tools or toothpicks
- Water and slip from previous lesson
- Plastic scraper or old credit card
- Paper towels

**Lesson Introduction:**

Pose the prompt: “Imagine making a clay animal or figure. How would you attach arms or legs so they don’t fall off?”

**Instructional Procedures:**

- **Exploration:** Practice scoring (scratching) surfaces where parts will join.
- **Explanation:** Discuss the science behind scoring and slip as a bonding process. Introduce “pinching” and smoothing techniques to strengthen joints.
- **Application:** Create a simple figurine with appendages (e.g., a clay person or animal), using scoring and slip to attach legs or arms. Use water sparingly to avoid weakening the structure.
- **Reflection:** Evaluate the strength of joints and discuss what techniques worked best.

**Assessment and Evaluation:**

Parent observes or photographs the clay figure and discusses observed techniques with student.

**Integration with Other Subjects:**

Art – focus on sculptural techniques and aesthetics. Science – talk about material stress and forces.

**Differentiation and Personalization:**

Encourage creativity in figure design for artistic interest. For extra challenge, make thinner appendages

or mixed-media additions (wire armatures).

**Real-Life Applications and Field Activities:**

Visit an art studio or pottery workshop to see other sculpture techniques.

**Resources for Further Learning:**

- Video: “Attaching Pieces in Clay Sculpting”
- Website: Ceramic art blogs focusing on air dry clay techniques

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## Day 4: Decorating Air Dry Clay Creations

**Lesson Title:** Artful Finishes: Decorating Your Air Dry Clay Art

**Learning Objectives:**

- Identify safe and effective materials to decorate dry air dry clay.
- Practice different decoration methods: painting, varnishing, and texturing.
- Evaluate how decoration affects the durability and appearance.

**Materials Needed:**

- Dried air dry clay objects (from prior lessons or pre-prepared)
- Acrylic paints, watercolor pencils, markers
- Paintbrushes, sponges
- Sealants: clear varnish or mod podge (non-toxic)
- Natural materials for texture (leaves, sand)

**Lesson Introduction:**

Ask: “How can you make your clay creations more colorful or interesting? What kinds of paint or other materials might work?”

**Instructional Procedures:**

- **Exploration:** Test different decorating materials on small clay samples.
- **Explanation:** Discuss how acrylic paint bonds well to dry clay and the importance of sealing to protect artwork. Describe unsafe materials to avoid.
- **Application:** Decorate a dried clay piece using paint and/or natural materials. Allow to dry and then apply sealant.
- **Reflection:** Observe changes and write about which methods were easiest or most effective.

**Assessment and Evaluation:**

Informal review of decorated pieces and discussion on technique preferences.

**Integration with Other Subjects:**

Art history: look at examples of painted clay from different cultures. Science: discuss the role of sealants in protecting materials.

**Differentiation and Personalization:**

Encourage use of favorite colors or themes for personal expression. For advanced learner, introduce mixed-media decoration incorporating other craft materials.

### **Real-Life Applications and Field Activities:**

Create holiday ornaments or gifts using decorated air dry clay. Participate in a local craft fair or school art exhibit.

### **Resources for Further Learning:**

- YouTube tutorials on painting air dry clay
  - Blog posts on air dry clay decoration tips
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## **Day 5: Culminating Project and Reflection**

**Lesson Title:** Create, Display, and Reflect: Personal Air Dry Clay Sculpture

### **Learning Objectives:**

- Apply learned techniques to create a complete air dry clay sculpture with appendages and decoration.
- Practice planning, execution, and problem-solving during the creative process.
- Reflect on the scientific and artistic aspects of working with air dry clay.

### **Materials Needed:**

- Air dry clay
- Tools from previous days
- Paints and sealants
- Journal/notebook for reflection

### **Lesson Introduction:**

Review concepts covered this week. Brainstorm project ideas incorporating learned methods.

### **Instructional Procedures:**

- **Exploration:** Plan a sculpture (sketch and list needed steps/materials).
- **Explanation:** Review best practices for modeling, joinery, drying, and decorating.
- **Application:** Create the sculpture, using scoring, slip, and decorative finishes.
- **Reflection:** Write or discuss what was easy, challenging, and interesting. Consider improvements for next time.

### **Assessment and Evaluation:**

Presentation of completed piece to family or mentor with explanation of techniques used. Self-assessment journal entry.

### **Integration with Other Subjects:**

Creative writing: write a story about the sculpture or its inspiration. Photography: take photos documenting the process.

### **Differentiation and Personalization:**

Allow flexible project scope based on interest and skill level. Support with extra resources or creative prompts as needed.

### **Real-Life Applications and Field Activities:**

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Display the work in a home “gallery” or gift to someone. Discuss next steps or other craft techniques to explore.

### **Resources for Further Learning:**

- Local art classes or workshops
  - Online forums for clay artists (Reddit, Facebook groups)
  - Books on sculpting and ceramic arts for teens/adults
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## **Additional Notes for Parents/Guardians:**

- **Parental Involvement:**

Help gather materials and set up a dedicated workspace with good lighting and ventilation. Encourage dialogue about observations and assist in hands-on activities as needed.

- **Learning Environment:**

Use a clutter-free surface covered with reusable mats or parchment. Keep water and cleaning supplies handy.

- **Multi-Age Considerations:**

If multiple children are participating, assign roles (e.g., one making slip, another sculpting) or differentiate complexity.

- **Cultural and Personal Relevance:**

Incorporate cultural stories or artistic styles meaningful to your family. Discuss how clay art is used worldwide.

- **Flexibility:**

Adapt schedule to suit daily energy and time. Emphasize process over perfection for a positive experience.

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This detailed week-long plan balances scientific understanding with artistic creativity, fostering both knowledge and hands-on skills while supporting the unique context of homeschooling. Enjoy the creative journey with air dry clay!