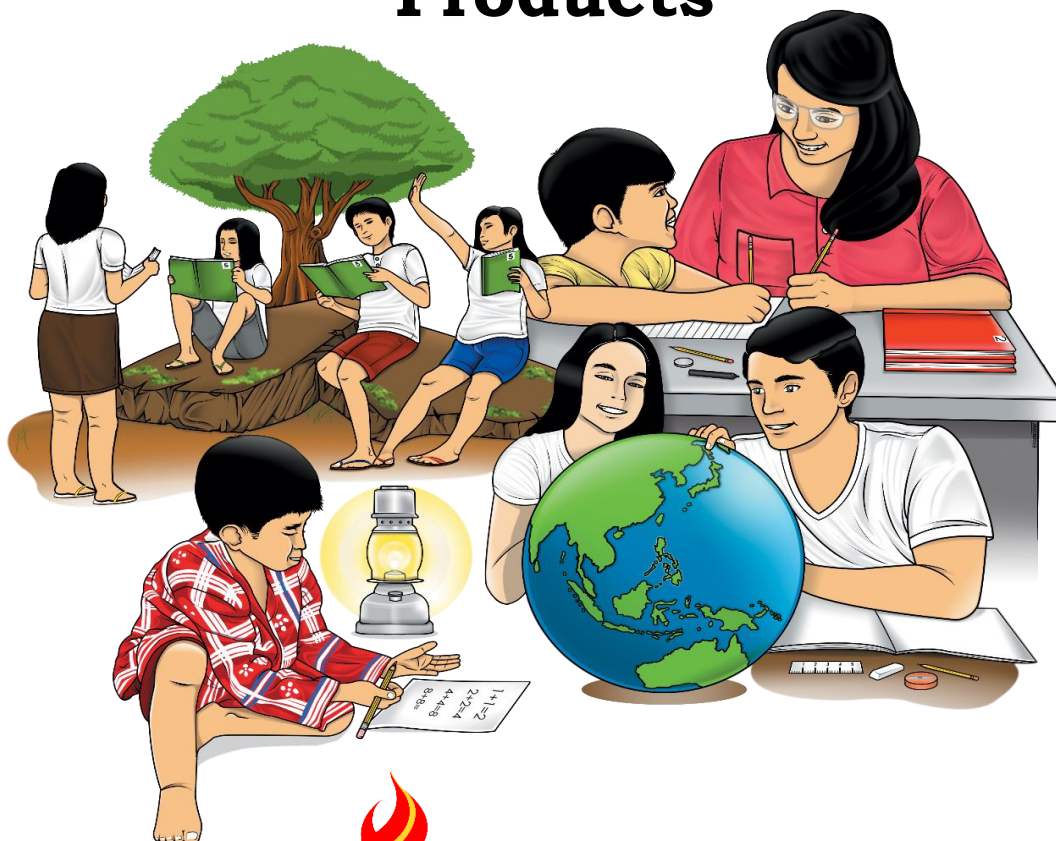


# Technology and Livelihood Education

## Industrial Arts-Module 2: Creative and Innovative Ways of Enhancing and Decorating Bamboo, Wood, and Metal Products



**TLE – Grade 6**  
**Alternative Delivery Mode**  
**Quarter 2 – Module 2: Creative and Innovative Ways of Enhancing and Decorating**  
**Bamboo, Wood, and Metal Products**  
**First Edition, 2020**

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**Development Team of the Module**

**Writers:** Ariel P. Baquinquito, Jofel D. Nolasco

**Editors and Reviewers:** Jeanalyn L. Jamison, Ana Lee C. Bartolo,  
Petronilo R. Bartolo, Velly P. Seguisa, Ivy Dalisay

**Illustrator:** Jofel D. Nolasco

**Layout Artist:** Jofel D. Nolasco, Ana Lee C. Bartolo, Ana Lorma A. Dahiroc

**Management Team:** Ramir B. Uytico, Pedro T. Escobarte, Jr.

Neri Anne M. Alibuyog, Bernie L. Libo-on

Elena Gonzaga, Donald T. Genine

Melgar B. Coronel, Ana Lee C. Bartolo

Jeanalyn L. Jamison

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**Department of Education – Region VI-Western Visayas**

Office Address: Duran Street, Iloilo City, Philippines, 5000

Telefax: (033) 336-2816, (033) 509-7653

E-mail Address: [deped6@deped.gov.ph](mailto:deped6@deped.gov.ph)

# **Technology and Livelihood Education**

## **Industrial Arts – Module 2: Creative and Innovative Ways of Enhancing and Decorating Bamboo, Wood, and Metal Products**

## **Introductory Message**

This Self-Learning Module (SLM) is prepared so that you, our dear learners, can continue your studies and learn while at home. Activities, questions, directions, exercises, and discussions are carefully stated for you to understand each lesson.

Each SLM is composed of different parts. Each part shall guide you step-by-step as you discover and understand the lesson prepared for you.

Pre-tests are provided to measure your prior knowledge on lessons in each SLM. This will tell you if you need to proceed on completing this module or if you need to ask your facilitator or your teacher's assistance for better understanding of the lesson. At the end of each module, you need to answer the post-test to self-check your learning. Answer keys are provided for each activity and test. We trust that you will be honest in using these.

In addition to the material in the main text, Notes to the Teacher are also provided to our facilitators and parents for strategies and reminders on how they can best help you on your home-based learning.

Please use this module with care. Do not put unnecessary marks on any part of this SLM. Use a separate sheet of paper in answering the exercises and tests. And read the instructions carefully before performing each task.

If you have any questions in using this SLM or any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator.

Thank you.



## ***What I Need to Know***

This module was designed and written with you in mind. It is here to help you master the skills on creative and innovative ways of enhancing/ decorating bamboo, wood, and metal products. The scope of this module permits it to be used in many different learning situations. The language used recognizes the diverse vocabulary level of learners. The lessons are arranged to follow the standard sequence of the course. But the order in which you read them can be changed to correspond with the textbook you are now using.

This module focusses on the following topics:

Steps on Enhancing Wood and Bamboo Products

1. Wood Turning
2. Pyrography
3. Hand Carving
4. Flocking
5. Inlaying
6. Gilding
7. Staining
8. Painting
  - a. Preparing Project for Painting
  - b. Painting the Project

At the end of this module, you should be able to:

- a. Demonstrate creative and innovative ways of enhancing and decorating bamboo, wood and metal products. (TLE6IA-0a-2)



## ***What I Know***

Directions: Read each question carefully. Choose the letter of the correct answer and write it in your answer sheet.

1. Which characteristics a person making handicrafts should acquire in order to develop marketable products?
  - A. Creativity and Innovativeness
  - B. Industry and hardworking
  - C. Confidence and artistry
  - D. Resourcefulness and Patience

2. Why should you apply finishing materials on products?
  - A. To enhance the appearance and protect the product.
  - B. To make people believe that your product is the best.
  - C. There is no need to advertise your product.
  - D. To make your family proud of you.
3. What should you do to achieve a beautiful and attractive product?
  - A. Use your creative thinking in blending colors.
  - B. Always ask assistance when sketching.
  - C. Use downloaded design.
  - D. Use many colors.
4. What tools are commonly used to polish rough surfaces and edges of the materials to achieve a very fine texture of the finished product?
  - A. Sandpaper and hand plane
  - B. Mallet and chisel
  - C. Saw and hammer
  - D. Screwdriver and plier
5. Why is it necessary to acquire the different skills in enhancing and decorating a product?
  - A. It can provide livelihood
  - B. It makes people proud of their self
  - C. It is a way to show your skills
  - D. It is one way to sell a product at high price
6. What type of paint is best for bamboo and wood products?
 

A. Water-based paint	C. Enamel paint
B. paint	D. None correct answer
7. When painting a finished product, the paint color should \_\_\_\_\_.
 

A. be Multiple color	C. be Bright color
B. be Dark color	D. Matched color with the material
8. The following are the reasons for enhancing a finished product, except one. Which one is not considered?
  - A. It will make our product more attractive.
  - B. It will protect our product.
  - C. The product will look expensive.
  - D. It makes the product dull.
9. What should be done before applying finishing materials with rough surfaces of a finished product?
 

A. Smoothed	C. Cleaned
B. Dried	D. All answers are correct
10. Applying finishing materials like paint or varnish, could be done with the use of any of the following materials below except \_\_\_\_\_.
 

A. Paint brush	C. Paint roller
B. Air brush	D. Spatula

## Lesson

# 1

# Creative and Innovative Ways of Enhancing and Decorating Bamboo, Wood, and Metal Products

Enhancing our finished products make their appearance more attractive, parts are protected, and well-refined. It also makes our product more interesting to the user.

Decorating finished products made from bamboo, wood and metal comes in so many ways, method or techniques depending on the kind of materials you used. Enhancing also involves your creativeness and innovativeness. These two should be accompanied by any chosen methods to make your work successful.



## *What's In*

Directions: Choose the appropriate word inside the box that will complete the sentence below. Write it on a separate sheet of paper.

enhance      decorate      innovation      accessorize      marketability

1. The easiest way of selling a product and determining the demand for a product in the market is called \_\_\_\_\_.
2. Creating and inventing something new is called \_\_\_\_\_.
3. \_\_\_\_\_ are something that you can put on a product that contributes to the beauty of the finished product.
4. To \_\_\_\_\_ is to put accessories to add beauty to a product.
5. To \_\_\_\_\_ means to refine, improve, or enrich the surface of the product.

1. **Lathe** – is a machine tool that rotates a workpiece about an axis of rotation to perform various operations such as sanding, drilling, deformation, and turning, with tools that are applied to the workpiece to create an object with symmetry about that axis.
2. **Gouge** – a form of chisel, a wood working tool
3. **Flocker** – a cylinder made of plastic or cardboard where fibers are deposited for flocking technique.

4. **Gold leaf** – gold in the form of very thin sheets, often used to cover objects such as decorative details in a project.
5. **Adhesive size** – is a glue designed specifically for working with metal leaf or foil.
6. **Grain of wood** – is the longitudinal arrangement of wood fibers or lines that naturally appear in lumber.



## ***What's New***

The Grade 6 learners of Mr. Reyes will be having their project exhibit during “Card Day”, for parents to see the output of their children in their EPP class. Clarisse, the president of their EPP Club conducted a meeting to gather suggestions from her classmates on what to do in order to present attractive, functional, beautiful and creative exhibits.

Linda suggested that they will enhance or decorate their bamboo, wood and other projects or output that they had in their EPP display room.

Clarisse asked, “What are they going to do to enhance or decorate their projects?”

What method do they need, to make their projects more creative and attractive?

Creativity and innovativeness are essential skills in improving, enriching and making the appearance of product superior.

Enhancing the product increases its marketability and durability.

1. What are the ways of enhancing and decorating a finished product especially those made from bamboo, wood and metal?



## ***What is It***

Products made from bamboo, wood, and metal are much in demand both in the local and international market. With the bigger needs of consumers, many handicraft makers continue creating and innovating different products made from these materials.

**Note:** Health and safety precautions are strictly observed when doing these methods.



## Steps on Enhancing Wood and Bamboo Products

### A. Wood Turning

1. Prepare all materials needed. These includes wood, wood lathe and basic turning tools like parting tools, gouge, skewed chisel and scrapper.
2. Set-up of your lathe on the area that is easy to clean up from wood chips and dust and well-lighted.
3. Make a sketch of the design you want on a sheet of paper.
4. Make marking of center points on your stock. This is done by drawing a line from one corner to opposite corner of a square or rectangular stock. The center is the point that lines intersect.
5. Mount the wood by placing its center on the headstock of the lathe spur.
6. Slide the tailstock center spur to the center of the other end of the wood to lock it.
7. Secure wood between the center by turning the handle on the tailstock center, then drive the wood blank into the spurn of the headstock.
8. Set the tool rest near the center of the work piece as close as possible, without hitting the wood when it is turning.
9. Start the lathe on low speed.
10. Start turning your wood, with the use of large gouge to rough out and round off the piece.
11. Use of parting tools and calipers. Set these tools to the depth of cuts that you need.
12. Use skewed chisel to make an angle or design your stock.
13. After you turned your piece to the design you want, polish it with sandpaper while it is still mounted. Begin with 180 grit and finish with 360-grit or higher sandpaper.
14. Cut the end of the wood that is attached to the headstock with fine-toothed hand saw.

### B. Pyrography

1. Prepare your preferred and refined blank such as wood or bamboo.
2. Make your design.
3. Transfer your design by tracing, use of cut out or a freehand drawing onto the prepared blank.
4. Use a skew tip soldering gun to burn the outline on your project.
5. After outlining, use soldering gun with broad foot tip for shading or filling your design.
6. Apply stains or oils to bring out the design and to enhance your project.

### C. Hand Carving

1. Decide what you want to carve by choosing what type of carving you want: whittling, relief carving, carving in the round, or chip carving
2. Make a drawing or a plan. It is very important before you start your project.

3. Prepare your materials such as a piece of wood that suits to what you want to carve, carving tools and design.
4. Transfer your design to the wood by using a pencil to lightly sketch the intended cuts and gouges before picking up any of your tools.
5. Rough out. This is to remove as much wood as possible until you visualize the basic shape of the piece.
6. Modeling. Remove excess material as possible until the overall form of the piece develops.
7. Detailing. This is to add details to the carving once the overall form is completed by using smaller tools.
8. You need to apply wood finish to your carving to protect it from moisture, oils, dirt, and other debris.

#### D. Flocking

1. Put masking tape on outside edges to keep it from any unwanted drips or areas you don't want to flock.
2. Load the mini-flocker with the fibers but do not fill the tube completely. Put the tube back together and set it aside.
3. Brush an adhesive on the areas to be flocked. It should be done quickly so that it will not dry before adding the fibers.
4. Start pumping the fibers in the flocker right on the wet adhesive. Use storage container when doing this. Fibers that do not make it onto the adhesive can be collected and reused to another project.
5. Remove masking tape and let it dry for 24 hours
6. Use soft brush to whip away any loose fibers in your project.

#### E. Inlaying

1. Prepare your tools and materials before you start.
2. Draw and create a design on a separate, individual pieces. Plan of what colors or materials you want each piece to be.
3. Cut your design using hand tools such as chisel, coping saw or a sharp knife.
4. Determine the location of your piece where you wanted it to inlay and trace its outline.
5. Cut the outline of the piece using a knife. Do it until you reach the desired depth.
6. Check from time to time if the two materials are fit when the piece is inserted.
7. If you are now sure to its fit, put a right amount of glue to the materials. Apply pressure by clamping until the glue is dry.
8. Finish it by applying finishing materials to add accent and protection to your project.

## F. Gilding

1. Preparing of object
  - a. Sand the surface until it is smooth
  - b. Cover with masking tape the areas you do not want to gild.
  - c. Apply primer to the object and let it dry.
  - d. Apply the gilding or adhesive size with paint brush.
  - e. Wait for 30 minutes to make the sizer become tacky.
2. Applying of gold leaf
  - a. Cut the gold leaf into smaller pieces to make it easier to apply.
  - b. Remove the leaf from the backing paper and lay on the surface of the object.
  - c. Burnish the gold leaf with dry brush or your fingers.
  - d. Smooth the leaf by putting tissue paper backing on top of the leaf to avoid tearing. Use your index finger to burnish the leaf and remove any air pockets.
  - e. Use gilder's brush to make the leaf to stick to the object completely and smoothly.
  - f. Check if there are any holes or parts not covered with gold leaf. Cover it with small bits of leaf.
  - g. Seal the gold leaf by applying an acrylic topcoat. This will protect the leaf from damage.

## G. Staining

1. Choose wood stains and wood conditioner that are compatible or with same base. Example, water-based stain to water-based conditioner.
2. Sand the wood going in the direction of the grain with 120 grit sandpaper until flaws removed. Repeat with 220 grit sandpaper.
3. Apply conditioner on the surface and let it set for 15 minutes.
4. Wipe away excess wood conditioner with clean rag.
5. Before applying a stain, sand again the wood with 220 grit sandpaper or higher in the direction of the grain. Remove the dust with clean cloth or rag.
6. Apply stain with the use of rag or brush. Wait for 15 minutes then wipe excess stain.
7. Apply second coat of stain if needed, then let it dry for four hours.
8. After the stain dried, apply first coating of protective finishing coat.
  
9. After the first coating fully dries, lightly sand your project with 220 grit sandpaper. Wipe away dust with clean cloth.
10. Apply second coat and let it dry completely.

## H. Painting

### A. Preparing project for painting

1. Check your project for any holes, scratches, or cracks.
2. Put fillers or wood putty for the areas that is needed. Wait until it dries and harden completely.
3. Start sanding your project with rough coarse sandpaper, 80 to 100-grit sandpaper. Sanding should be in the direction of the grain of wood.
4. Finish sanding with fine sandpaper.
5. Clean your project from any dust or wood residue after sanding.
6. Apply primer or base paint on your project. Primer helps paint achieve a uniform look on a project. The most common base-paint for wood is flat white enamel.

### B. Painting the project

1. Choose the kind of paint you want to use; flat, semi-gloss, or gloss paint.
2. Load your paint brush with paint using a paint bucket or a tray.
3. Start painting on the top part moving downward.
4. Make sure that all sides were painted. Wait until it dry.
5. Repeat painting if needed until you reach the desired outcome of your project.



## ***What's More***

### Activity 1: Categorization

Learning the Skill: Categorizing materials according to methods used

Directions: Read each statement below. Determine in what ways of product enhancing the following skills belong to. Put a check (✓) to the column appropriate for it. Copy the table below on a separate sheet of paper to answer.

Steps	Creative and Innovative Ways of Enhancing a Product							
	Wood turning	Pyrography	Carving	Flocking	Inlaying	Gilding	Staining	Painting
1. preparation of materials								
2. use of smaller tools to add details								
3. follow wood grain when sanding								
4. use of adhesive size								
5. make markings of center								
6. use of broad tip soldering gun for shading								
7. apply wood conditioner								
8. putting of masking tape								
9. make a design								
10. use of primer paint								

### Activity 2: Observing

Learning the Skill: Analyzing and evaluating the quality of enhancement

Directions: Choose any enhanced finished product at home or from the market. Try to evaluate how the product was enhanced based on this rubric.

Criteria	Excellent 8-10	Good 4-7	Fair 1-3	Score
Design	Design is strictly followed and constructed according to procedure	There is 1-3 changes in the design base on procedure	Design is constructed with less detail.	
Workmanship	Project is useful, durable and of quality	Project is durable useful but not properly finished.	Project is useful only and not properly finished	
Appearance	The item is neat and presentable	The item has a few flaws but do not detract from the overall look.	The item has several flaws that detract from the overall look.	
Total Score				



## ***What I Have Learned***

Directions: Read each item carefully. Choose the appropriate word inside the box that will complete the sentence below. Write your answer on a separate sheet of paper.

result	fillers	clean	large gouge
plan	80 to 100-grit	dust	back paper
360-grit	Top	materials	sharp knife

1. Remove \_\_\_\_\_ every time after sanding with clean rag.
2. Put \_\_\_\_\_ into the cracks and holes of wood before polishing uneven surfaces.
3. Use \_\_\_\_\_ sandpaper when sanding rough surfaces of wood.
4. When painting, let the first coating dry thoroughly before applying the second coating until you arrive the best \_\_\_\_\_.
5. When applying varnish, always \_\_\_\_\_ the parts of the product.
6. Remove \_\_\_\_\_ of gold leaf before laying on the surface of the object.
7. At the start of wood turning, use \_\_\_\_\_ to rough out and round off the piece.
8. In refining the wood surface. use \_\_\_\_\_ or higher sandpaper.
9. When painting, it should be done at the \_\_\_\_\_ part going downward.
10. Before doing any method of enhancing a product, a person should have a \_\_\_\_\_.



## ***What I Can Do***

Make your own project. Upgrade it using the skills that you have learned to enhance your product.

Ask an older member of your family to rate your product based on the rubric in Activity 1 of this module.



## Assessment

Directions: Read each question carefully. Choose the letter of the correct answer and write it in your answer sheet.

1. A wood working tool used to remove excess wood.  
A. Mallet                  B. Gouge                  C. Pallet                  D. Saw
2. What is the common part in all methods of enhancing finished products?  
A. Preparation of all materials needed.  
B. Planning and creating of design.  
C. Smoothing of objects.  
D. All answers are correct.
3. The common material used to polish the surface of a finished product is \_\_\_\_\_?  
A. Knife                          C. Sandpaper  
B. Chisel                         D. Gloss paint
4. What is the gauge or number of sandpapers to be used in order to smoothen and remove small imperfections on a wood surface?  
A. 40-60 grit                      C. 360-600 grit  
B. 80-120 grit                     D. Any gauge can be used
5. What do you call the preparatory coating applied on materials before painting?  
A. First coat                      C. Primer  
B. Topcoat                         D. Paint
6. \_\_\_\_\_ is to add details to the carving once the overall form is complete by using smaller tools.  
A. Detailing                        C. Rough out  
B. Modeling                        D. Transfer design
7. The following are the usual ways to transfer your design from paper to your preferred piece or object except one, which is NOT?  
A. Tracing                         C. Use of cut out  
B. Printing                         D. Use of free hand drawing
8. To avoid damage from your finished project, it should be applied with \_\_\_\_\_.  
A. Undercoat                      C. Metal primer  
B. Finishing topcoat                D. Glossy paint
9. For finishing surfaces of your project smoothly, use \_\_\_\_\_ sandpaper.  
A. 40-60 grit                      C. 360-600 grit  
B. 80-120 grit                     D. Any gauge can be used
10. What is the most important thing that you should always remember every time you work?  
A. Health and safety                C. Grades from your teacher  
B. Result of your output            D. Design of your project

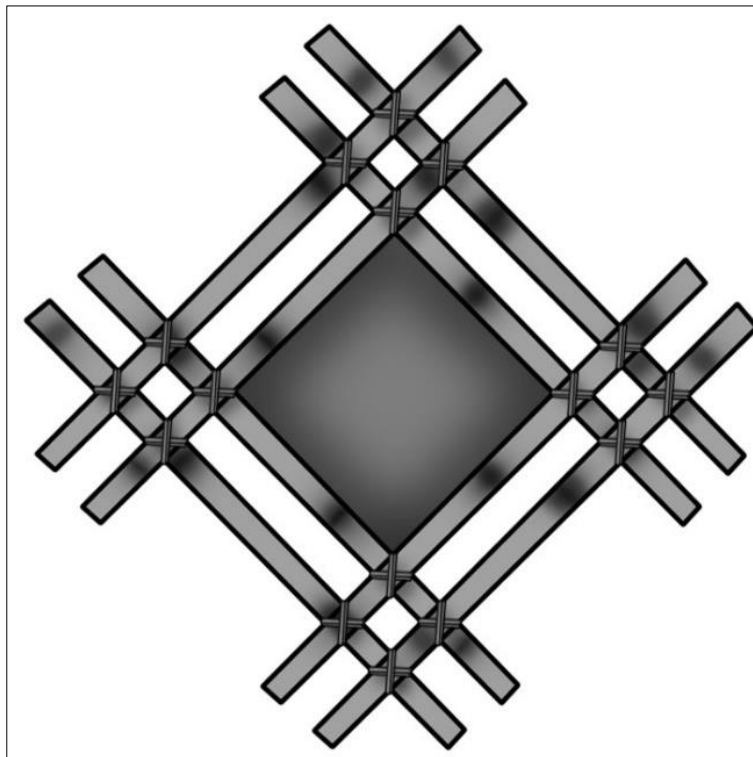


## ***Additional Activities***

### Project making

Let us apply what you have learned from this module. Make a wall décor made of bamboo or wood as shown in the figure below. You can follow the design or make your own.

Use the rubric from What's More Activity 2, as your guide in making the project.



Jofel D. Nolasco, Bamboo Wall Décor, 2019





# Answer Key

<p><b>Assessment</b></p> <ol style="list-style-type: none"> <li>1. B</li> <li>2. D</li> <li>3. C</li> <li>4. B</li> <li>5. A</li> <li>6. A</li> <li>7. B</li> <li>8. B</li> <li>9. C</li> <li>10. A</li> </ol> <p><b>Additional Activities</b></p> <p>Answers may vary.</p>	<p><b>What I Have Learned</b></p> <ol style="list-style-type: none"> <li>1. Dust</li> <li>2. Fillers</li> <li>3. 80 to 100-grit</li> <li>4. Result</li> <li>5. Clean</li> <li>6. Back paper</li> <li>7. Large gouge</li> <li>8. 360-grit</li> <li>9. Top</li> <li>10. Plan</li> </ol> <p><b>What I can Do</b></p> <p>Answers may vary.</p>	<p><b>What' In</b></p> <ol style="list-style-type: none"> <li>1. Marketability</li> <li>2. Innovate</li> <li>3. Accessories</li> <li>4. Decorate</li> <li>5. Enhance</li> </ol> <p><b>What' More</b></p> <p>Activity 1&amp; 2</p> <p>Answers may vary.</p>	<p><b>What I Know</b></p> <ol style="list-style-type: none"> <li>1. A</li> <li>2. A</li> <li>3. A</li> <li>4. A</li> <li>5. A</li> <li>6. C</li> <li>7. D</li> <li>8. C</li> <li>9. D</li> <li>10. D</li> </ol>
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**For inquiries or feedback, please write or call:**

Department of Education - Bureau of Learning Resources (DepEd-BLR)

Ground Floor, Bonifacio Bldg., DepEd Complex  
Meralco Avenue, Pasig City, Philippines 1600

Telefax: (632) 8634-1072; 8634-1054; 8631-4985

Email Address: [blr.lrqad@deped.gov.ph](mailto:blr.lrqad@deped.gov.ph) \* [blr.lrpd@deped.gov.ph](mailto:blr.lrpd@deped.gov.ph)