Design Process

Define the problem | Learn | Generate ideas | Design Development | Implementation

National Visual Art Standards

VA:Cr2.1.IIa: Through experimentation, practice, and persistence, demonstrate acquisition of skills and knowledge in a chosen art form.

VA:Cr2.3.IIa: Redesign an object, system, place, or design in response to contemporary issues.

VA:Cr3.1.IIa: Engage in constructive critique with peers, then reflect on, reengage, revise, and refine works of art and design in response to personal artistic vision.

VA:Re.7.2.IIa: Evaluate the effectiveness of an image or images to influence ideas, feelings, and behaviors of…

VA:Re8.1.IIa: Identify types of contextual information useful in the process of constructing interpretations of an artwork or collection of works.

VA:Cn10.1.IIa: Utilize inquiry methods of observation, research, and experimentation to explore unfamiliar subjects through art making.

Guiding Questions

- How does idea generation relate to art or design making?

- Why is it important to explore many ideas when solving a design problem?

- There are many methods for generating ideas. Which three idea generating methods work best? How should they be used?

Objectives

Students will…

- strategize idea generating methods in an effort to come up with more unique ideas;

- identify and evaluate types of contextual information useful in generating lots of ideas;

- create questions, lists, and a mind map in an effort to generate more specific ideas.

Vocabulary

Brainstorm: a spontaneous group discussion to produce ideas and ways of solving problems.

Cliché: a phrase or opinion that is overused and betrays a lack of original thought.

Collage: a piece of art made by sticking various different materials such as photographs and pieces of paper or fabric onto a backing.

Time Period: at least five classes, 45–60 minutes in length

Lesson Introduction: Generate Ideas

Coming up with uniquely original ideas may be the most difficult part of the design process. Ideas are dependent on and require the first two steps in the design process. Only after the problem has been truly defined and learning (research) has taken place should a student move on to this step in the design process. It should be reiterated that the design process is fluid and that all aspects could in fact overlap. It's been defined as a linear process for ease of use while learning the process. Ideally, these steps should be taken one by one as if climbing a staircase—one leads to the next and eventually ends up at the expected destination. With design, it's actually not unusual to find unexpected results. They are welcomed, not shunned.

Generating unique solutions to any problem, whether concerning art or life in general, is difficult. As students apply this principle to their design problems, make sure they understand how this same process could also help them in other areas of their lives. For example, it's not unusual for people to jump to conclusions. Often, these conclusions are inaccurate and cause more problems. The generating ideas parts of the design process can help students come up with better solutions and ideas to any problem. Even designers do this, but it can be avoided through this step in the design process. The more ideas students learn to find and explore the better informed their solutions will become.

Ideas are what separate decent design/designers from exceptional design/designers. Think about all the students in your class—will all their ideas be equally innovative? Comparison is not completely necessary at this level, but it can help with the realization that not all ideas are created equal. Designers must figure out strategies to help them generate ideas, lots of them (this lesson will do just that). This **idea dumping** can lead to fascinating outcomes—things not thought of or expected. This is where innovation happens. So, what are **ideas**?

Students tend to wait around for an idea to simply arrive. This may never happen (or take a long time) and generally is fruitless. Designers must actively generate ideas. The goal is to use existing research outcomes (Learning—Step 2 in the design process) to form a **concept** or concepts that lead to possible solutions. These concepts are possible visual expressions or directions a project my go in. Ideas can be unique and effective. This is the goal. If preliminary steps in the design process are accomplished, students are more likely to find unique solutions. The opposite is true when steps are skipped—student's ideas tend to be generic, formulaic, and **cliché**.

Generating ideas is an active exercise. It takes motivation and discipline to find original thought. As a rule of thumb, don't settle on the first

Concept: an abstract idea; a general notion; a plan or intention; a conception; an idea or invention to help sell or publicize a commodity; an idea or mental picture of a group or class of objects formed by combining all their aspects.

Consciously: aware of and responding to one's surroundings; awake; having knowledge of something; aware; concerned with or worried about a particular matter; deliberate and intentional.

Creative spark: a spark is an electrical discharge (or light caused by the electrical discharge) and can be used to ignite something. In this case, a creative spark is the stimulant that causes a creative moment or idea to happen and often leads to more ideas. Often, designers need to create the spark and be proactive.

Creativity: the use of the imagination or original ideas, especially in the production of an artistic work—inventiveness, imagination, innovation, innovativeness, originality, individuality, artistry, inspiration, vision; enterprise, initiative, resourcefulness.

Icon: a sign whose form directly reflects the thing it signifies—resembles the thing it represents.

Idea: a thought or suggestion as to a possible course of action; a concept or mental impression; the aim or purpose.

Idea dumping: is the rapid flow and capture of ideas. Unlike the process of brainstorming, idea dumping is more spontaneous and impulsive. It happens unexpectedly and often in random places. Be ready.

Ideation: the formation of ideas or concepts.

Mind map: a diagram used to visually organize information and make connections. A mind map can start with an image or word. Connections are made and visually linked to expand on the central concept, while other ideas branch out.

Montage: the technique of producing a new composite whole from fragments of pictures, text, or music.

Thumbnail sketch: are small, simple, rapid exploratory sketches used to indicate conceptual directions for a project.

Materials

- Drawing paper
- Drawing pencil
- Poster board
- Ruler
- Sketchbook
- Technical pen (used to make lines of constant width)
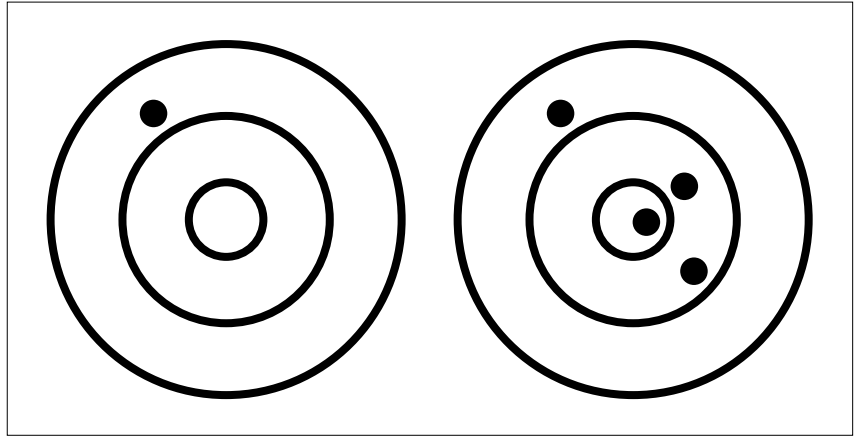- Writing paper

FIGURE 1: **Multiple ideas.** The more ideas a designer comes up with the more likely they are to find a unique idea. Imagine throwing darts or target practicing. If only one dart is thrown only one possibility exists, and it may not be on target. But if the designer had a handful of ideas, one of those may hit the mark. Mind, they all hit the target so the solutions may work, but they could work better–be more effective. Also, practicing idea generation is crucial to improving the quality of "throws" or ideas. Just like someone throwing darts, the more practice they have, the better they get. That also holds true with idea generation.

idea. **Consciously** search further and seek for richer results (see Figure 1). The list below offers some useful methods to help trigger, evaluate, and connect what designers like to call "**creative spark**":

· ask yourself questions (see Figure 2)

· make lists

· make **mind maps**—word associations (see Figure 3)

· create **thumbnail sketches** (off-computer)

· make studies and comparisons

· **brainstorm**

· **collage** and **montage**

· play

Helpful Questions to Expand Design Thinking

Ask the following questions when beginning a project.

Wouldn't it be funny if…? This questions sets up the potential for a humorous solution by getting the reader to laugh along with you.

Isn't it odd that on the one hand it's…and on the other it's…? by asking this question, you are on the path to finding a double meaning or an ironic twist in your subject that you can share.

Can I use this image as a sign (to represent an idea) rather than as an illustration (to represent a particular place, thing, or action)? Signs can communicate ideas more powerfully than scenes.

Will this design attract attention? More specifically, will my poster reach out from the wall with appeal? Will my book cover speak intelligently about the contents inside?

How can I bring a unique quality to the project? How can I make something ordinary become extraordinary?

(Santoro, pg.130)

FIGURE 2: **Helpful questions** (Santoro, Scott W. *Guide to Graphic Design*. 1st ed. New Jersey: Pearson, 2014. Print). Questions can be used as a springboard to idea development. Here's a snapshot to get you started. What pertinent questions can you ask your students to help them think about what and how they thumbnail sketch?

Figures

Art Context, Cultural Connections and Relevancy

Generating ideas is not only important in the design process but in other aspects of a student's life. If students feel there is always only one answer or one solution, they may start to feel stuck. Learning how to generate ideas can help them come up with alternatives to the seemingly large issues they deal with daily. For example, there may be more than one option after they finish their senior year of high school (e.g. no more school, work, technical college, university, parenthood, travel, etc.).

This unit is specific to generating ideas for design projects, yet the skill of coming up with ideas is valuable, not just in vocational situations but life itself. Think of all the situations that demand good ideas, especially at this age. High school students are faced with difficult decisions. Being able to come up with more and hopefully better ideas will help prepare them to make more thought out decisions.

FIGURE 3: **Mind map close-up**. These are good ways to expand on an idea to help foster more ideas and make unexpected connections. One word or picture can be placed in the middle of a large piece of paper and connections expand outward. Mind maps can also be used to connect multiple words. Almost anything can be connected somehow. Following connections can lead to interesting ideas.

This is not a comprehensive list but rather a starting point. There are many other ways to foster creativity and ideas. Think about other activities that could promote creativity and implement them in the classroom.

The last one on the list (play) is often overlooked as it seems childish or a waste of time. The reality is that play fosters creativity. Research is showing that marginal amounts of time spent doing things considered play actually promote more and deeper concentration along with creativity. Examples in business include game playing breaks (card games, ping pong, skateboarding, etc.) and adult coloring books. These type of diversions bring about more direct concentration that can lead to creativity.

The classroom can be a great place to experiment with creativity building activities. These are important when generating ideas
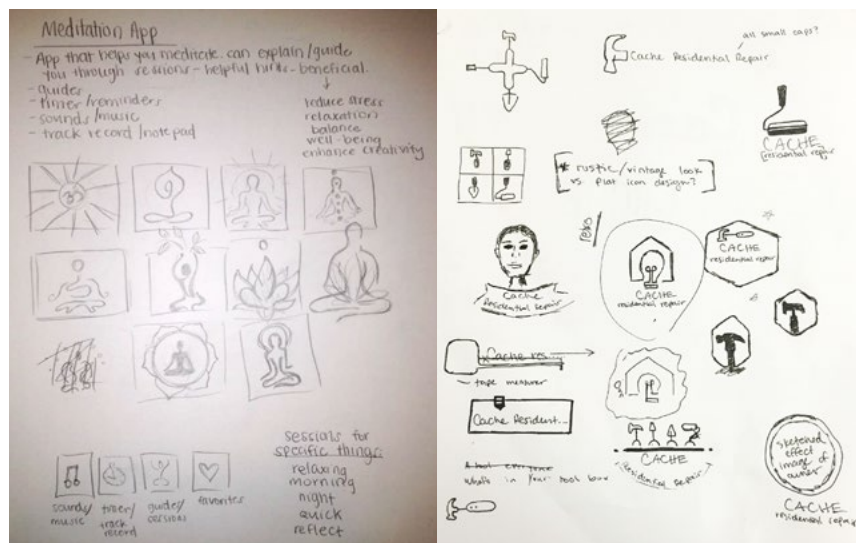

FIGURE 4: **Thumbnail sketches** for two different projects. These pages represent only a small portion of the amount required for satisfactory results. The more students create, the more able they are to find a unique solution to the given design problem. Thumbnail sketches provide for creative output with a specific goal in mind. Sketching also allows for design development. A design should be conceived and developed before taking it to a computer for implementation. Students often believe that graphic design is merely learning and using design software such as Adobe products. These are useful tools but just that–tools. Tools of the trade are important, but they don't come up with the great ideas.

or coming up with a useful concept. Students often get stuck on this step, as it requires thought, connections, and artistry all mixed together to form a unique outcome. The next step in the design process is design development. Without great ideas, students will default to the expected or cliché when they start to develop their design. It's important to emphasize the impact of ideation on design development and explore multiple methods to encourage this. The following lesson activities are meant to help students generate ideas through some of the specific methods listed above.

ACTIVITY PROCESS:

Engagement (the hook–motivation and relevancy)

Adults, especially parents and teachers, are tired of hearing about why kids can't get things done or accomplished. Students are tired of being told what to do and how to do it. Instead of finding so many excuses, students could use the Generating Ideas part of the design process to find alternative solutions or methods to get things done. This would increase their confidence and motivation. This skill could help build trust with adults. It's a win-win situation. This skill set can also be applied with interpersonal relationships and friendships.

DAY 1

Introduction

Questions are great ways to promote thinking. Thinking leads to ideas, so starting with a question can help students get in the habit of questioning themselves.

Assignment 4–Question

SYNOPSIS: Asking a question can focus the mind and lead thoughts and discussion in a particular direction. The goal of this assignment is to focus thought toward one question: *Wouldn't it be funny if…?* This question sets up the potential for humorous solutions by getting the reader to laugh along with the student.

ASSIGNMENT: Have students choose an object or thing and create a sketch of it–quick and simple (think icon)–an apple, cat, cell phone, etc. Now have them write down the question: *Wouldn't it be funny if…?* Students should finish the question with their chosen object inserted. Have students answer the question ten times with ten different endings. Once they have their ten questions done, have them create a sketch exemplifying each of the ten questions/statements. For example:

· Wouldn't it be funny if an apple were square?

· Wouldn't it be funny if an apple had shark teeth?

· Wouldn't it be funny if an apple doubled as a Swiss Army Knife?

· Wouldn't it be funny if an apple could melt?

PROCESS:

1. Choose an object or thing.

2. Compile a list of ten written questions.

3. Create ten matching sketches.

4. Laugh a little (or a lot)—share sketches with class and discuss the connection to generating ideas.

Adaptations and Accommodations

An object and questions could be provided for students who need extra help.

Extensions

Students who want to be challenged could create a set of icons all based on a unifying theme and style. They would still choose an object but simplify their drawing down to an icon. Then use a theme (e.g. the zoo, the 70s, boy bands, etc.) and their own personal style to unify the set.

Homework or Independent Work

Finish at home if students didn't finish in class.

Closure

Generating ideas can be fun and effective but it takes thought and work. The work is figuring out ways to effectively come up with ideas. Asks students what they learned about generating ideas. This could be a verbal or written response.

Checks For Understanding

Did students make the connection between asking humorous questions, sketching, and idea generation? Sketches can be ideas and can help develop more ideas.

DAY 2

Introduction

Another method of idea generation is through the creation of mind maps. A mind map is the visual connection between words, ideas, or things. They can be as complicated or simple as desired. They can start with one word branching out (think family tree), or multiple words coming together. The main purpose behind the mind map is making connections.

Assignment 5—Mind Map

SYNOPSIS: Students will connect two words together (an object to an emotion) using the mind map method, then write a simple story using a connection path or grouping found in their mind map. The idea is to physically (with lines) connect the two words through other words, eventually creating a path that connects the two words. There really is no wrong way to do this. The only thing to watch out for is direct (straight lines) paths from one word to the other. The mind map should not be linear (see Figure 5).

ASSIGNMENT: With two words chosen, write one on each end of a poster board, then connect them by completely filling the poster board with words, eventually connecting the two words. Using the created mind map, write a short story (in a notebook, sketchbook, or on writing paper) exemplifying the two chosen words.
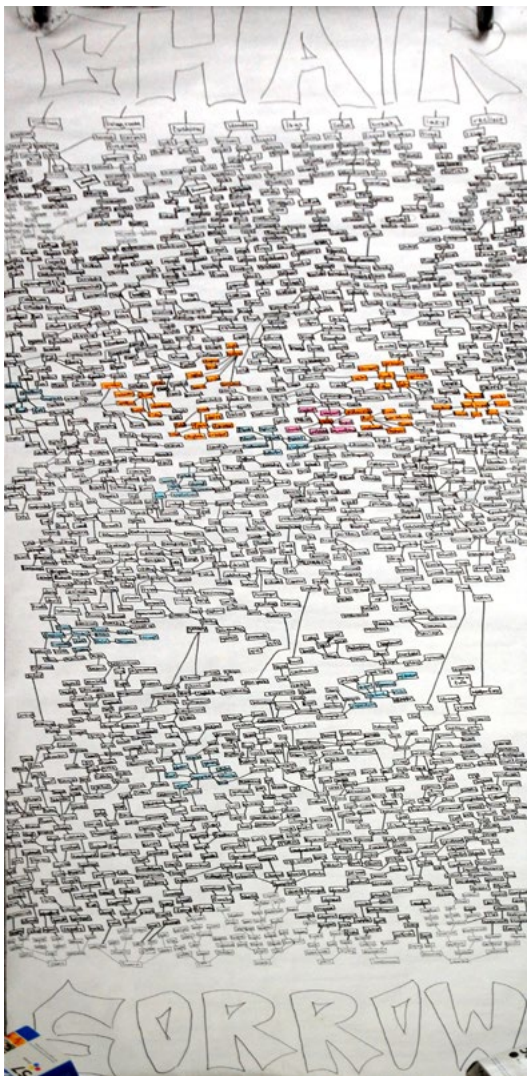

FIGURE 5: **Mind map.** An example of a mind map connecting two words.

PROCESS:

1. Have students write an object and an emotion on two separate pieces of paper. Gather them into two piles and have students randomly pick from both piles. They should now have a random object and emotion.

2. Have students write the object they chose on one end of a poster board and the emotion on the other. These should be larger than the connections they'll create in between.

3. Now have them branch out with words, from both ends, eventually meeting (connecting) in the middle. Makes sure their word explorations are not linear. Have them find multiple connections as they move through the poster board.

4. Analyze the paths made on the poster board. Choose an interesting path. This will be the springboard for their short story.

5. Write a short story (in a notebook, sketchbook, or on writing paper) connecting the object and emotion using a path or grouping found in the student's mind map.

6. Share the story with the class.

Adaptations and Accommodations

For students who need more help, intermediate words could be placed between the two chosen words for them to connect—a series of shorter connections still connecting the object to emotion. Writing the story can stump some students. Help them make larger connections and put it into context to help them see the connection.

Extensions

A mind map can be simple or complex. Students can be challenged by creating larger mind maps (e.g. 6 feet long) or using small hand writing forcing them to add more. They can focus on finding multiple interesting paths and possible stories from those paths. Their stories could be more developed.

Homework or Independent Work

Finish mind map if more time is needed.

Closure

Anything can be connected with time and effort. Interesting connections can be found. These connections help designers understand visual relationships and exploit consumer idiosyncrasies. This is important because designers need to communicate directly with specific groups of people. They need to understand them in order to accomplish the task they set out to do.

Checks For Understanding

What interesting connections did students find between their two chosen words? These can be serious or goofy. The intention is to find connections, albeit some my be far fetched. These are the catalyst to creating their story in Day 3. More importantly, their mind map can now be an ideation springboard when needed. Have students share a possible story from one connection.

Assignment 5—Mind Map (continued)

With the mind map complete, students can now analyze it and write their short story. Remember, this unit and project are about generating ideas. Encourage students to develop their ideas. There are no bad ideas at this point—ideas promote more ideas.

ANALYZE: Students need to analyze the paths made or interesting groupings in their mind map. These are the connections between the two chosen words. Have them select an interesting path or group. This will be the springboard for their short story.

SHORT STORY: Write a two-three page short story connecting the chosen object and emotion using a selected path or grouping found in the student's mind map. The story doesn't need to be particularly long, just developed enough to make cohesive sense. Again, the purpose is idea generation. The story helps make connections—more ideation tools in the creative toolbox.

Adaptations and Accommodations

Some students may need help seeing the connections they've actually already made. Direct students to, or point out, paths or groups (on the mind map) that could make interesting stories. Help students see the connections. When it comes to story writing, some students may need more direction as to where/how to get started. Ask them questions based on the chosen mind map path or grouping to get them started.

Extensions

Mind map paths or groupings, as well as the short story, can be as complex as desired. Students needing more of a challenge can expand on these. Their connections and short stories could be more developed, not just longer but more thought through.

Homework or Independent Work

Finish short stories to share in the next class.

Closure

There are many paths that can be taken with this sort of idea generation method. This is why there are no bad ideas at this point in the process. Only time and practice will help students refine ideation methods and make this step in the design process more effective. This can take years to develop and master. Even professional designers are constantly refining their ideation processes.

Checks For Understanding

There may be confusion as to why students are using words and writing stories instead of drawing pictures. Fear not, this will come. Before sketching, thinking needs to happen. This is the hard part and often the step in the design process that is skimmed or outright skipped, yet the most important step as the unique ideas that solve the design problems are thought up. Ideas are what separate good design from mediocre design. It's not technical computer skills, illustrations skills, or any other skills—it comes down to good ideas.

These other skills are important but only serve to decorate without a unique, interesting, and thought provoking idea.

DAY 4

Assignment 5–Mind Map (continued)

The assignment should be complete and students should be ready to share their short stories with the class. Developing presentation skills is important, as designers will often need to sell their ideas to coworkers or clients. They should be able to articulate their ideas verbally as well as visually.

Adaptations and Accommodations

Students with stage fright could share their stories as a group or in small groups.

Extensions

Presentations could be more elaborate with visuals–students could start to visualize the story.

Closure

Generating good ideas is difficult, time consuming, and the most important part of the design process. Good ideas lead to better design, which separates good design from the rest. Aesthetics are important, but combined with a great idea, can become exceptional.

Checks For Understanding

Students now have another ideation tool in their tool belt. Through the creation of a mind map and articulation of their story, they should understand the need for idea generation. This becomes even more important as students start to sketch, another ideation method.

DAY 5:

Introduction

The Generating Ideas part of the design process includes sketching. Thumbnail sketches are how artists and designers can visualize their ideas (see Figure 6). They become even more effective after some preliminary thought has occurred, such as asking questions, creating list, and mind mapping. These activities help develop the concept and strategy of a design, where sketching visually describes the concept and brings it to life. Thumbnail sketches should be small, hence the term "thumbnail", though this may actually be a bit too small. The size is not as important as the breadth of the exploration. The purpose of thumbnail sketching is to explore lots of ideas quickly. Thumbnail sketches should not be masterpieces but idea dumping. There will be ample opportunity to refine work later. Use the thumbnail sketching to visually explore lots of ideas. The more thumbnails that are created, the more likely students are to finding unique solutions.

Assignment 6–Thumbnail Sketches

SYNOPSIS: Typically, thumbnail sketches are just a small part of a larger project. For this assignment, students will practice volume sketching in order to come up with unique ideas. Experience has found that

FIGURE 6: **Riff longboard logo thumbnails.** Sketch work for a longboard company of the student's choice. The project required them to created a longboard company and start to brand it. These are concept driven thumbnail sketches utilized in an effort to find the best execution to the problem at hand. Note, to the bottom right, a small portion of the student's research is visible. They've categorized their thoughts into "purpose & goals," "purpose of logo design," "hoping to achieve in the identity," "target audience," etc. Thumbnail sketches are meant to visually explore concept ideas. There aren't any wrong answers at this point, but the process of sketching will lead a designer toward what may solve the design problem. This is the time to try any and all ideas, even the preposterous. They may lead to successful ideas, if not, a designer now knows they've tried that direction and can move on to other ideas. The important thing is to keep going.

the first 10-15 sketches typically produce the expected cliché outcome. This is anticipated and part of the thumbnail process. After these, more unique ideas start to form as students are forced past their comfort zone, past the expected and known—they must think.

ASSIGNMENT: Produce 50 different thumbnail sketches (in a sketchbook) for a new company of the student's choice.

PROCESS:

1. Choose a company.

2. Define some of the company's characteristics—research (e.g. products/services, target audience, where is it, etc.).

3. Thumbnail sketches. Remember that these thumbnails are just preliminary sketches—not finished products—which will be refined in the next assignment.

Adaptations and Accommodations

Assign predefined companies to those who may need extra help.

Extensions

Students needing more of a challenge could apply the Learning part of the design process by researching their new company's industry and really defining specific company characteristics and attributes. They could also go a bit further by refining their thumbnails into roughs—a bit larger, more detailed and worked out.

Homework or Independent Work

Finish thumbnails sketches. This could also extend into a second day if needed.

Closure

Thumbnail sketches are a way to explore lots of ideas quickly. Don't skip this part of the design process. Many new design students want to skip this step and jump right to the computer, which can become a crutch if students ignore sketching. Learning and research leads to idea development, which leads to visualization and exploration through thumbnails. This is where design happens.

Checks For Understanding

There are many ways and many methods to generate ideas. Only a few of the most popular methods were addressed in this lesson. What other methods may there be? It's important to understand how to and why to generate ideas. Through thinking, pertinent solutions can be found. Sketching is important but don't forget ideation and conceptualization, which should inform the thumbnail process in the end. Thumbnail sketches are the visualization starting

point. Once potentially successful ideas have been identified, they must be refined. This leads to the next step in the design process—design development.

Lesson Assessment Based On Objectives

Students should be assessed on their ability to demonstrate an awareness and proper use of the Generate Ideas step in the design process as it applies to their own work. The correct use of unit vocabulary in class dialog and in written reflection should be accurate and appropriate to the work they make and see. All work produced in and out of class—as well as student writing—should be collected and analyzed. (See *Unit 3D and 3E Rubrics.docx* for assessment and rubric ideas. Customize to meet class specific assessment needs.)