

Miscellany Drawer Assignment

Extended Abstract

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Figure 1: Miscellany drawer created Fall 2017

ABSTRACT

The Miscellany Drawer is an introductory project for learning modeling in 3D software for CGI animation that incorporates collaboration and 3D printing. It gives students the opportunity to recreate a real-life object while learning about the software interface and modeling tools before getting into actual animation. Traditionally the modeling of the object was the extent of the exercise but the 3D printing and collaborative aspects have been added to help students see the possibilities of new technologies, draw connections to 3D printing used in stop motion animation, draw connections with fine artists like Louise Nevelson and Claes Oldenburg, and draw connections to the collaborative nature of animation production pipelines. Students will sketch, model, and 3D print a hard surface object approved by the class to promote variety and complexity in the final composition. The class will combine all the individual prints into a shoebox using stick-tac and superglue to adhere the pieces into a well-designed artwork. To ensure it is not just a few students arranging the box but everyone contributing, each student can only touch or move their own 3D print. With multiple sections of the class, doing the project over the course of a few years the boxes can be arranged to create an large installation art piece.

CCS CONCEPTS

• **Social and professional topics** → **Model curricula**; • **Computing methodologies** → *Shape modeling*; • **Applied computing** → *Media arts*;

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KEYWORDS

Groovy Graphics, Modeling, Animation, 3D Printing, Collaboration

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1 OVERVIEW

1.1 Individual work - 15 points

You will bring in at least five hard surface objects as options to model. From the the five objects the class will chose one object for you to model balancing the interest/originality it will bring to the drawer, and the level of difficulty it will be to complete. You must bring the object with you every class meeting during this assignment. Think about and write down the tools and techniques you would use to model the object. Create three orthogonal sketches (digital or traditional) of the object with consistent proportions in all views that you will use in the software as a modeling reference. Model the selected object.

- Milestone 1 (Day 2): Present objects to class
- Milestone 2 (Day 3): Present sketches
- Milestone 3 (Day 4): Present rough model
- Milestone 4 (Day 5): Present completed model in class

1.1.1 Assessment.

- Productivity
 - Above Average (3 points) - Student has above average time management skills for this project. Class time was used wisely. Considerable progress was made week-to-week as seen during in-class critiques. It is clear the student worked at home and/or in school in the lab. All milestones were met.
 - Average (1 or 2 points) - Student has average time management skills for this project. Class time was used wisely some of the time. Only average progress was made week-to-week as seen during in-class critiques. Some milestones may have been missed.
 - Below Average (0 points) - Student has below average time management skills for this project. Not much progress was made week-to-week as seen during in-class critiques. Class time was not always used wisely, but student did do some additional work at home or the lab. Milestones were missed.
- Concept and Pre-Production
 - Above Average (3 points) - Selected objects show creativity, thoughtfulness, and ambition. Sketches are expressive, detailed and maintain proper proportions in each view.

- Average (1 or 2 points) - Selected objects show some creativity, thoughtfulness, or ambition but may have not have put in enough time or effort to find better choices. Sketches are somewhat expressive, detailed and mostly maintain proper proportions in each view.
- Below Average (0 points) - Selected objects show lack of creativity, thoughtfulness, or ambition in selection. More time and effort should have been spent to find better choices. Sketches are not expressive, detailed or do not maintain proper proportions in each view.
- Execution
 - Above Average (3 points) - Use of the tools and techniques needed for this project are efficient and precisely executed. Created assets are high quality and properly demonstrate the principles of art and design.
 - Average (1 or 2 points) - Use of the tools and techniques needed for this project are somewhat efficient or executed with some precision. Created assets are average quality and somewhat demonstrate the principles of art and design.
 - Below Average (0 points) - Use of the tools and techniques needed for this project are not efficient or executed without precision. Created assets are low quality and do not demonstrate the principles of art and design.
- Modeling Effectiveness
 - Above Average (3 points) - Model is clean. Much time and effort went into making the model an accurate representation of the physical object.
 - Average (1 or 2 points) - Model is somewhat clean. Some time and effort went into making the model a somewhat accurate representation of the physical object.
 - Below Average (0 points) - Model is not clean. More time and effort could have been spent making the model an accurate representation of the physical object.
- Project Scope
 - Above Average (3 points) - Student ensures that final submission is of the utmost quality. Work was handed in on time and in the correct format(s) required. Followed naming convention. All project criteria were met.
 - Average (1 or 2 points) - Work may have been handed in late and in some of the correct formats required. Somewhat followed naming convention. Some of the project criteria were met.
 - Below Average (0 points) - Work was handed in late and many of the formats that were required were incorrect. Did not follow naming convention. The project criteria were not met.

1.2 Collaborative work - 5 points

You will go through 3D printer training, and print the object you modeled. All students in the class will add and combine your 3D printed objects into a single shoebox. You will do this as a group but you are the only person allowed to touch your 3D print. You must communicate with your classmates to arrange the box into a work of art keeping in mind all the principles of art and design.

- Milestone 1 (Day 5): Schedule printer training

Table 1: Metadata in tabular format

Summary	introductory project for learning modeling in 3D software for CGI animation that incorporates collaboration and 3D printing
Learning Outcomes	<ul style="list-style-type: none"> - Learn to modeling for CGI animation - Create sketches to present the item clearly - Apply principles or art and design - Learn the basics of 3D printing - Demonstrate communication & collaboration
Classification	Animation, Modeling,
Audience	Freshman Animation Majors and Minors
Dependencies	3D CGI Software, 3D Printer
Prerequisites	None
Strengths	Learning about CGI Software and 3D printing
Weaknesses	Because they are just starting to learn the software the models don't always meet their expectations
Variants	All items are chosen based on a theme
Assessment	Productivity, Concept and Pre-Production, Design, Collaboration, Execution, Print Quality, Modeling/Printing Effectiveness, Project Scope

- Milestone 2 (Day 6): Sign up for print due date
- Milestone 3 (Day 15): Assemble drawer

1.2.1 Assessment.

- Productivity
 - Expectation (1 point) - All milestones were met.
 - Below Expectation (0 points) - Milestones were missed.
- Design
 - Expectation (1 point) - The composition of the drawer is well composed and creative
 - Below Expectation (0 points) - The composition of the drawer is not well composed
- Collaboration
 - Expectation (1 point) - Student collaborated well in the design of the drawer
 - Below Expectation (0 points) - Student did not fully collaborate in the design of the drawer
- Printing Effectiveness
 - Expectation (1 point) - The 3D print is an accurate representation of the model.
 - Below Expectation (0 points) - The 3D print is not an accurate representation of the model.
- Print Quality
 - Expectation (1 point) - 3D print is clean and structurally sound
 - Below Expectation (0 points) - 3D print is not clean or structurally sound

2 METADATA

Metadata consists of tabular data given in Table 1.

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