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Part 1: Body and Facial Proportions (2 sessions)

Students analyze body and facial proportions of human and animated characters, and consider the effect of proportions on the audience's perception of these humans and characters. Students use ratios and set up proportions to determine head and height measurements. Students then calculate head : height ratios and ratios of facial features for images of humans and animated characters.

Activity 1A: Ratio Calculations: Vitruvian Man

Students complete a table of ideal human proportions based on Leonardo da Vinci's iconic drawing of Vitruvian Man. Students use the ratios to calculate dimensions of body features for different-sized individuals with Vitruvian Man's proportions. Students measure dimensions of head and height for humans and animated characters and calculate their head : height ratios.

Activity 1B: Measuring Facial Proportions

Students analyze how different facial proportions can affect the audience's perception of an animated character. Students measure facial features on images of human and animated characters, and calculate ratios related to the feature's position on the face and the width of the face.

Part 2: Designing with Body and Facial Proportions (2–3 sessions)

Students use scale factors and ratios to change the size of a character's head and the size and position of facial features. Students then design their own characters, using what they have learned about body proportions and facial proportions to inform their character's appearance and personality. Students specify head : height ratios and facial feature ratios to create a desired look, and then draw their character.

Activity 2A: Changing Characters' Body and Facial Proportions

Students discuss how differences in facial proportions affect an audience's perceptions of human and animated characters. Students use a scale factor to change a character's head : height ratio, then use the revised ratio to alter the character's appearance by enlarging or reducing the size of the character's head. Students use scale factors and ratios to revise both the position and width of a character's facial features.

Activity 2B: Using Body and Facial Proportions to Create a Character

Students design a character and specify a head : height ratio and facial feature ratios that express their character's personality. Students create their character and share it with the class.