Unit .pptx files are provided for editing purposes so teachers can customize content

Optional and Additional activities are not included in Time Estimate

**What is Drafting?** – Time Estimate 15 min

 **No Materials needed**

**Activity:**

 “What is Drafting” Powerpoint lecture link 10:15 (contains additional YouTube video)

[https://mediaspace.minnstate.edu/media/What+is+DraftingF/1\_gw110ftw](https://mediaspace.minnstate.edu/media/What%2Bis%2BDraftingF/1_gw110ftw)

What is Drafting.pptx

*Additional activities: host a guest speaker related to drafting, tour a business related to drafting*

**Measuring** – Time Estimate 50 min

**Materials:**

Rulers

Pencils

Print and cut Measuring cheatsheet.pdf for each student

**Measuring cheatsheet.pdf**

Print Measuring formative exercise.pdf for each student

**Measuring formative exercise.pdf**

Print Measuring worksheet.pdf for each student

**Measuring worksheet.pdf**

Computers for rulergame.net

**Activity:**

“Measuring” Powerpoint lecture link 8:36

<https://mediaspace.minnstate.edu/media/Measuring/1_60a5w5gh>

Measuring.pptx

Refer to Measuring cheatsheet.pdf during lecture and formative exercise, then as needed

Have students try the formative exercise – approx. 10 min

Have students complete the Measuring worksheet – approx. 15 min

*Optional: have students measure various objects in the classroom*

Review rulergame.net with students – 5 min

**Rulergame.net** - as time allows, will be a good review tool as well

**Orthographic Projection** – Time Estimate 30 min

**Materials:**

Print paper box-model.pdf for each student

**Paper box.pdf**

scissors, tape or glue sticks, pencil to label sides

*Optional: paper for sketching views of classroom objects*

**Activity:**

“Understanding Orthographic projection” Powerpoint lecture link 7:26 (contains additional YouTube video)

[https://mediaspace.minnstate.edu/media/Orthographic+Projection/1\_ey82qmkd](https://mediaspace.minnstate.edu/media/Orthographic%2BProjection/1_ey82qmkd)

Understanding Orthographic projection.pptx

Paper box exercise – approx. 15 min

*Optional: students can sketch the top, front, and side views of objects around the classroom*

**Line Types** – Time Estimate 15 min

 **No Materials needed**

**Activity:**

 “Line Types” Powerpoint lecture link 12:40

[https://mediaspace.minnstate.edu/media/Line+Types/1\_4fcbugvq](https://mediaspace.minnstate.edu/media/Line%2BTypes/1_4fcbugvq)

Line Types.pptx

**Sketching** – Time Estimate 30 min overview, does not drawing time for each pdf handout

**Materials:**

1/4” graph paper for each student

**L Block.pdf**

**A-B.pdf**

**C-D.pdf**

**E-F.pdf**

**G-H.pdf**

**I.pdf**

Blocks to help reinforce concepts

Ruler and Circle template for handout I

Pencils

**Activity:**

“Sketching” Powerpoint lecture link 5:19

<https://mediaspace.minnstate.edu/media/Sketching/1_8t091yum>

Sketching.pptx

Refer to L Block.pdf and A-B.pdf during the lecture

Students measure and draw orthographic views from handouts