Name	Partner Name		
TA Name	Section Letter	_ Day	_ Time

Experiment 6 Worksheet – Synthesis & Application of Organic Dyes

Each student submits this individually on Canvas after lab

Pre-Lab Requirements

- 1. **Dress for lab** see safety rules arrive a few minutes early
- 2. Fill out every page's purpose, structures, and reagent table
 Print this worksheet or copy templates by hand
- 3. Procedure Diagrams must be complete before you can start the lab

Part C. Purpose and Indigo Reaction Schemes: Synthesis & Dye

Part C Reagent Table

Refer to the procedure for amounts and safety table for hazards; find the chemical properties on Wikipedia!

							Boiling or molting	
Name	Volume	Density	Mass	MW	mmol	Equiv*	point	Hazards
o-nitrobenzaldehyde	-					1		
acetone								
water								
NaOH, 2.5M								
Indigo	-					-		
Sodium dithionite, Na ₂ S ₂ O _{4 (aq)}					-	-		

III. Procedure Diagrams for Part C: Synthesis of Indigo and Vat Dyeing

- All labeled equipment, chemical names with amounts, and pertinent safety notes in every step.
- Slugs@home Exp 6 website Equipment & Safety pages; pictures & videos of each part of the lab.
- The class notes include useful diagrams as well!

Part C Data

Synthesis of Indigo

Mass of o-nitrobenzaldehyde _____g

Re-calculated theoretical yield _____g

Product loss

Mass of indigo _____g

% Yield

** Leave space to record observations of the vat dyeing process, it's pretty cool!

Parts D-E Organic Dye Structures: Malachite Green, Eosin Y, and Alizarin

II. Parts D-E Reagent Table

Refer to the procedure for amounts and safety table for hazards; find the chemical properties on Wikipedia!

Name	Volume	Density	Mass	MW	mmol	Equiv*	Boiling or melting point	Hazards
Malachite Green								
Eosin Y								
Alizarin								
Sodium bicarbonate, 0.5 % NaHCO _{3 (aq)}								

Procedure Diagrams for Parts C-D: Direct and Mordant Dyeing

- All labeled equipment, chemical names with amounts, and pertinent safety notes in every step.
- Slugs@home Exp 6 website Equipment & Safety pages; pictures & videos of each part of the lab.
- The class notes include useful diagrams as well!

<u>Data</u>

Observations of Dyed Fabric Swatches – get creative in describing the color's depth & hue

Dye & conditions	Acetate	Cotton	Nylon	Polyester	Acrylic	Wool
Indigo						
Alizarin – untreated fabric swatch						
Alizarin Cu ²⁺						
Alizarin Fe ²⁺						
Alizarin w/ Al ³⁺						
Malachite Green						
Eosin Y						

<u>D. Accountability Buddy Contract</u>: You and your partner have the option work together to submit one report and get the same grade in GradeScope. Add your name to one box in part (a) and schedule a time to collaborate after lab in part (b).

(a) *Who's finalizing what?* Discuss the in-lab questions in the Exp 6 PDF with your partner during / after lab. Use the writing worksheet toward the end of this document for step-wise instructions on writing the experimental methods (c) Decide who will type or draw the revised responses to which in-lab questions.

In-Lab Q's # / Exp Methods	In-Lab Q's # / Exp Methods

(b) "DO" Date: _____ = when / how you'll meet or exchange work to discuss & proofread, at least 1-2 days before the DUE date.

Who will combine both sets of in-lab questions and submit as one PDF to GradeScope?_____