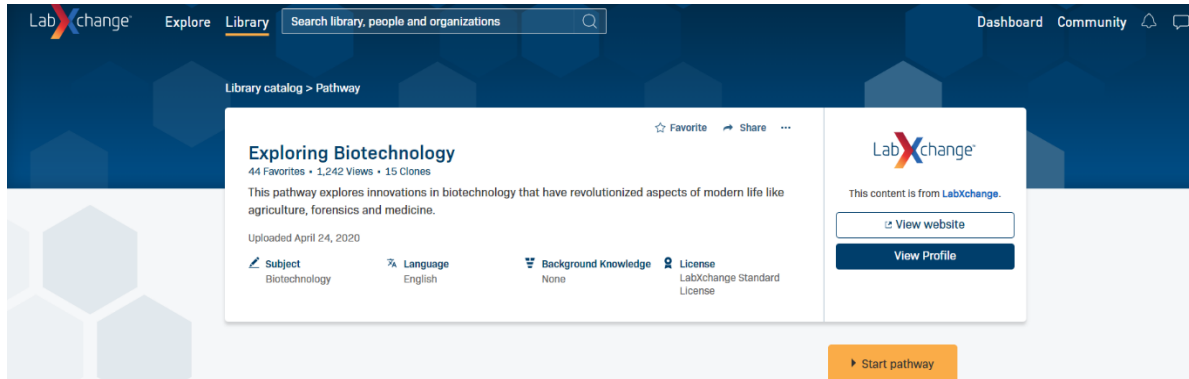


Unit 1: Introduction to Biotechnology

1: Exploring Biotechnology

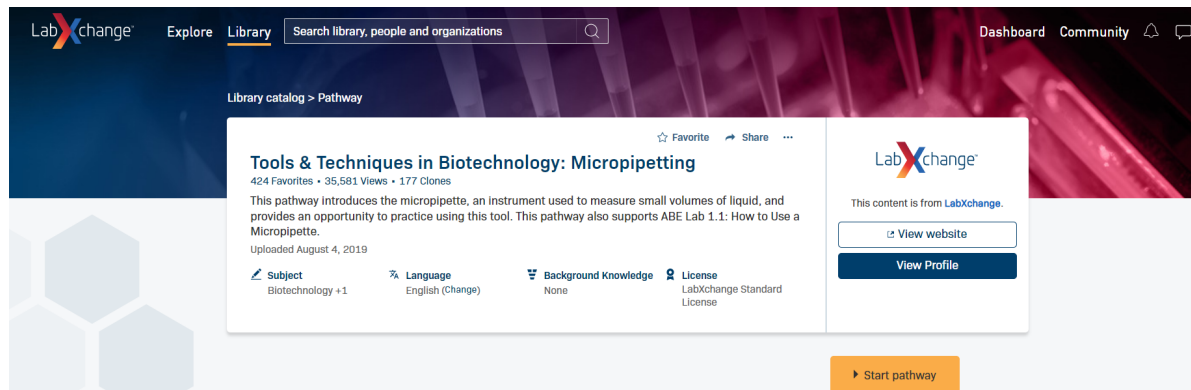


Learning objectives

1. You will explain explain the use of genetic engineering techniques like gel electrophoresis and DNA sequencing in analyzing DNA.
2. You will explain the use of genetic engineering techniques like PCR and gene cloning in manipulating DNA.
3. You will examine some of the ethical considerations around manipulating DNA.

Unit 1: Introduction to Biotechnology

2: Tools and Techniques in Biotechnology: Mircropipetting



The screenshot shows the LabXchange website interface. At the top, there is a navigation bar with the LabXchange logo, 'Explore', 'Library' (highlighted), and a search bar. On the right, there are links for 'Dashboard', 'Community', and notification icons. Below the navigation bar, the page title is 'Library catalog > Pathway'. The main content area displays a pathway card for 'Tools & Techniques in Biotechnology: Micropipetting'. The card includes statistics: '424 Favorites • 35,581 Views • 177 Clones'. The description states: 'This pathway introduces the micropipette, an instrument used to measure small volumes of liquid, and provides an opportunity to practice using this tool. This pathway also supports ABE Lab 1.1: How to Use a Micropipette.' It also notes 'Uploaded August 4, 2019'. Below the description, there are four tabs: 'Subject' (Biotechnology +1), 'Language' (English (Change)), 'Background Knowledge' (None), and 'License' (LabXchange Standard License). To the right of the card, there is a sidebar with the LabXchange logo, a note 'This content is from LabXchange.', and buttons for 'View website' and 'View Profile'. At the bottom right of the page, there is an orange button labeled 'Start pathway'.

Learning objectives

1. You will identify the parts of a micropipette.
2. You will describe situations when a micropipette is needed to measure volume.
3. You will model how to set the volume and read the volume window of a micropipette.
4. You will demonstrate how to use a micropipette to transfer small volumes of liquid.

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3: Making Measurements

The screenshot shows the LabXchange Library catalog interface. The top navigation bar includes the LabXchange logo, 'Explore', 'Library' (selected), and a search bar. The breadcrumb trail reads 'Library catalog > Pathway'. The main content area displays the 'Making Measurements' pathway, which has 14 favorites, 1,242 views, and 3 clones. A description states: 'This pathway introduces the units scientists use when making measurements and how to judge and express the meaning and level of confidence in a measurement.' It was uploaded on April 24, 2020. Metadata includes: Subject: Techniques (Chemistry), Language: English, Background Knowledge: None, and License: LabXchange Standard License. On the right, there is a 'View website' button and a 'View Profile' button. At the bottom right, there is a 'Start pathway' button.

LabXchange

Explore Library Search library, people and organizations

Dashboard Community

Library catalog > Pathway

Making Measurements
14 Favorites • 1,242 Views • 3 Clones

This pathway introduces the units scientists use when making measurements and how to judge and express the meaning and level of confidence in a measurement.

Uploaded April 24, 2020

Subject
Techniques (Chemistry)

Language
English

Background Knowledge
None

License
LabXchange Standard License

This content is from LabXchange.

[View website](#)

[View Profile](#)

[Start pathway](#)

Learning objectives

1. You will use metric units to record measurements.
2. You will label the significant figures in a measurement.
3. You will describe the level of confidence in a measurement using its reported uncertainty and number of replicates.

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4: Polymerase Chain Reaction (PCR)

The screenshot shows the LabXchange website interface. At the top, there is a navigation bar with the LabXchange logo, 'Explore', 'Library' (highlighted), and a search bar. On the right, there are links for 'Dashboard', 'Community', and notification icons. Below the navigation bar, the breadcrumb 'Library catalog > Pathway' is visible. The main content area features a card for the 'Polymerase Chain Reaction (PCR)' pathway. The card includes the title, statistics (118 Favorites, 9,559 Views, 27 Clones), a brief description of PCR, a 'Show less' link, and the upload date (August 18, 2020). Below this, there are four tabs: 'Subject' (Biotechnology +4), 'Language' (English), 'Background Knowledge' (None), and 'License' (LabXchange Standard License). To the right of the card, there is a sidebar with the LabXchange logo, a note 'This content is from LabXchange.', and two buttons: 'View website' and 'View Profile'. At the bottom right of the card, there is an orange button labeled 'Start pathway'.

Learning objectives

1. You will summarize the principle of PCR.
2. You will explain the mechanism and primer design of PCR.
3. You will identify the steps of experimental PCR in a method video.

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