

# Create an App Camera

## Native App Development

**Time:** 60 mins

## Introduction

In this class, the student/s will learn to add a camera component with its permissions to the app. Students will also learn to capture and save the picture to show it on the share feed screen.

## New Commands Introduced

- |  |   |
|--|---|
| • <code>Camera.useCameraPermissions()</code>                             | Hook to check or request user permissions for access to the device camera   |
| • <code>takePictureAsync()</code>  | Method takes a picture with the camera and saves it to app's directory  |
| • <code>Promise()<br/>.then(() =&gt;{ })<br/>.catch(() =&gt;{ });</code> | Executes the code for <code>Promise()</code> and processes <code>then()</code> method if promise is fulfilled else rejects using <code>catch()</code> method. |
| • <code>CameraType.front</code>  | Sets the camera type to front   |
| • <code>CameraType.back</code>   | Sets the camera type to back  |

## Vocabulary

- A **camera permission** allows you to choose if any of your apps can access the camera.
- A **promise** is a returned object to which you attach callbacks, instead of passing callbacks into a function.
- A **strict equality operator (===)** returns a value only if the data type of both the operands is the same.

## Learning Objectives

Student/s should be able to:

- **Recall** use of `useState` to declare and update the values of state.
- **Demonstrate** how to add a camera and its permissions.
- **Explain** how to toggle the camera and click the picture.
- **Save and Share** the clicked picture to the share feed screen.

# Activities

## 1. Class Narrative: (2 mins)

- Brief the student/s that uploading pictures on the feed screen is a time consuming task. Hence she plans to add a camera feature to the SnapBuzz app to instantly click and upload pictures.

## 2. Concept Introduction Activity: (5 mins)

- Let the student/s play the explore-activity and explore the camera in the SnapBuzz app.
- Ask students to click a picture, add caption and check feed details on the console after clicking on Share button.
- Using the slides, explain that the student/s will learn:
  - to add a camera and its permission
  - to capture the snap
  - to store and share the snap

## 3. Activity 1: Add a Camera and its Permission: (12 mins)

### Teacher Activity: (6 mins)

- Let the students observe the different elements on the camera screen.
- Highlight the front and back camera features for camera components from camera-expo library and the why permissions needed for camera access.
- Explain to add the camera and its permissions with front and back camera type component.

### Student Activity: (6 mins)

- Guide the student/s to add the camera and its permissions with front and back camera type component.

## 4. Activity 2: Capture the Snap: (12 mins)

### Teacher Activity: (6 mins)

- Highlight that the camera should have the feature to click pictures.
- Explain by introducing a reference function that contains the reference to the camera properties using `r` as the reference parameter.
- Explain the use of the predefined promise function `takePictureAsync()` to save the photo when the picture is taken.
- Define arrow functions to click picture and toggle camera

### Student Activity: (6 mins)

- Guide the student/s to capture the snap and toggle the camera and display the photo uri on the console.

Probing question: Why are arrow functions used?

Expected answer: Allows the omission of the curly brackets and the return keyword.

## 5. Activity 3: Store and Share Captured Snap: (8 mins)

### Teacher Activity: (6 mins)

- Explain how the captured picture from the camera screen is needed to be passed to the share feed screen by defining a function to handle screen state.
- Explain how to check if `screenState` is 'create' and set the `screenState` to 'share' and the photo else set photo to null and `screenState` to 'create'.

**Student Activity: (8 mins)**

- Guide the student/s to share the clicked picture to the share feed screen.
- Guide the student/s to define a function to add a new feed and call it on pressing Share button.

**6. Introduce the Post class project: (2 min)**

- Add a clicked picture to the post share screen for the Bid and Buy app.

**7. Test and Summarize the class learnings: (5 mins)**

- Check for understanding through quizzes and summarize learning after respective missions.
- Summarize the overall class learning towards the end of the class.

**8. Additional activities:**

- Encourage the student/s to click multiple images, store them in a list and display them using the FlatList component.
- Encourage the student/s to use touchable opacity to select an image from multiple images to display on the share feed screen.

**9. State the Next Class Objective: (1 min)**

- We will view the image from the share feed screen to the feed screen and also allow to delete the feed from the feed screen.

## U.S. Standards:

CSTA: 2-AP-11, 2-AP-12, 2-AP-13, 2-AP-14, 2-AP-19

Links Table		
Activity	Activity Name	Link
Class Presentation	Create a Feed screen	<a href="https://s3-whjr-curriculum-uploads.whjr.online/ec21ce99-4ac6-4182-8537-ceb5775edb90.htmlc">https://s3-whjr-curriculum-uploads.whjr.online/ec21ce99-4ac6-4182-8537-ceb5775edb90.htmlc</a>
Explore Activity	SnapBuzz App	<a href="https://snack.expo.dev/@procodinggclass/wad-402---56-ica-snapbuzz-feed---solution">https://snack.expo.dev/@procodinggclass/wad-402---56-ica-snapbuzz-feed---solution</a>
Teacher Activity 1	Add a Camera and Its Permission	<a href="https://snack.expo.dev/@procodingclass/wad-402---53-ta1-add-a-camera-and-its-permission">https://snack.expo.dev/@procodingclass/wad-402---53-ta1-add-a-camera-and-its-permission</a>
Teacher Activity 1 Solution	Add a Camera and Its Permission	<a href="https://snack.expo.dev/@procodingclass/wad-402---53-ta1-add-a-camera-and-its-permission---solution">https://snack.expo.dev/@procodingclass/wad-402---53-ta1-add-a-camera-and-its-permission---solution</a>
Student Activity 1	Add a Camera and Its Permission	<a href="https://snack.expo.dev/@procodingclass/wad-402---53-sa1-add-a-camera-and-its-permission">https://snack.expo.dev/@procodingclass/wad-402---53-sa1-add-a-camera-and-its-permission</a>
Teacher Reference: Student Activity 1 Solution	Add a Camera and Its Permission	<a href="https://snack.expo.dev/@procodingclass/wad-402---53-sa1-add-a-camera-and-its-permission---solution">https://snack.expo.dev/@procodingclass/wad-402---53-sa1-add-a-camera-and-its-permission---solution</a>

Teacher Activity 2	Capture the Snap	<a href="https://snack.expo.dev/@procodingclass/wad-402---53-ta2-capture-the-snap">https://snack.expo.dev/@procodingclass/wad-402---53-ta2-capture-the-snap</a>
Teacher Activity 2 Solution	Capture the Snap	<a href="https://snack.expo.dev/@procodingclass/wad-402---53-ta2-capture-the-snap---solution">https://snack.expo.dev/@procodingclass/wad-402---53-ta2-capture-the-snap---solution</a>
Student Activity 2	Capture the Snap	<a href="https://snack.expo.dev/@procodingclass/wad-402---53-sa2-capture-the-snap">https://snack.expo.dev/@procodingclass/wad-402---53-sa2-capture-the-snap</a>
Teacher Reference: Student Activity 2 Solution	Capture the Snap	<a href="https://snack.expo.dev/@procodingclass/wad-402---53-sa2-capture-the-snap--solution">https://snack.expo.dev/@procodingclass/wad-402---53-sa2-capture-the-snap--solution</a>
Teacher Activity 3	Show the Captured Picture	<a href="https://snack.expo.dev/@procodingclass/wad-402---53-ta3_1-show-the-captured-picture">https://snack.expo.dev/@procodingclass/wad-402---53-ta3_1-show-the-captured-picture</a>
Teacher Activity 3 Solution	Show the Captured Picture	<a href="https://snack.expo.dev/@procodingclass/wad-402---53-ta3_1-show-the-captured-picture---solution">https://snack.expo.dev/@procodingclass/wad-402---53-ta3_1-show-the-captured-picture---solution</a>
Student Activity 3.1	Show the Captured Picture	<a href="https://snack.expo.dev/@procodingclass/wad-402---53-sa3_1-show-the-captured-picture">https://snack.expo.dev/@procodingclass/wad-402---53-sa3_1-show-the-captured-picture</a>
Teacher Reference: Student Activity 3.1 Solution	Show the Captured Picture	<a href="https://snack.expo.dev/@procodingclass/wad-402---53-sa3_1-show-the-captured-picture---solution">https://snack.expo.dev/@procodingclass/wad-402---53-sa3_1-show-the-captured-picture---solution</a>
Student Activity 3.2	Save the New Feed	<a href="https://snack.expo.dev/@procodingclass/wad-402---53-sa3_2-save-the-new-feed">https://snack.expo.dev/@procodingclass/wad-402---53-sa3_2-save-the-new-feed</a>
Teacher Reference: Student Activity 3.2 Solution	Save the New Feed	<a href="https://snack.expo.dev/@procodingclass/wad-402---53-sa3_2-save-the-new-feed---solution">https://snack.expo.dev/@procodingclass/wad-402---53-sa3_2-save-the-new-feed---solution</a>
Student's Additional Activity 1	Show the Captured Picture	<a href="https://snack.expo.dev/@procodingclass/wad-402---53-aa1-add-multiple-images?platform=android">https://snack.expo.dev/@procodingclass/wad-402---53-aa1-add-multiple-images?platform=android</a>
Teacher Reference: Student's Additional Activity 1 Solution	Show the Captured Picture	<a href="https://snack.expo.dev/@procodingclass/wad-402---53-aa1-add-multiple-images--solution">https://snack.expo.dev/@procodingclass/wad-402---53-aa1-add-multiple-images--solution</a>
Student's Additional Activity 2	Save the New Feed	<a href="https://snack.expo.dev/@procodingclass/wad-402---53-aa2-select-an-image">https://snack.expo.dev/@procodingclass/wad-402---53-aa2-select-an-image</a>
Teacher Reference: Student's Additional Activity 2 Solution	Save the New Feed	<a href="https://snack.expo.dev/@procodingclass/wad-402---53-aa2-select-an-image---solution">https://snack.expo.dev/@procodingclass/wad-402---53-aa2-select-an-image---solution</a>
Post Class Project	Create an Auction Post	<a href="https://snack.expo.dev/@procodingclass/wad-402---53-pcp-add-feed-data?platform=web">https://snack.expo.dev/@procodingclass/wad-402---53-pcp-add-feed-data?platform=web</a>
Teacher Reference: Post Class Project Solution	Create an Auction Post	<a href="https://snack.expo.dev/@procodingclass/wad-402---53-pcp-add-feed-data---solution?platform=web">https://snack.expo.dev/@procodingclass/wad-402---53-pcp-add-feed-data---solution?platform=web</a>

