



Mobile Apps 1: Designing for Mobile

Touch targets, thumb reach, hierarchy and accessibility

NAME _____

DATE _____

CLASS _____

Designing for a Small Touch Screen

A phone app is used with a fingertip, often with one hand, on a screen a few inches wide. A fingertip is much less precise than a mouse pointer. Every tappable element has a **touch target**: the area that responds to a tap, which can be larger than the icon drawn on screen. Apple's **Human Interface Guidelines** (iOS) recommend touch targets of at least **44 x 44 points**. Google's **Material Design** (Android) recommends at least **48 x 48 dp** (density-independent pixels). Points and dp are both units that stay about the same physical size on any screen, so these rules work on every phone.

When people hold a phone in one hand, the thumb reaches the lower and middle part of the screen easily. That comfortable area is the **thumb zone**. The top corners, especially the one farthest from the thumb, are the hardest to reach. Put frequent actions where the thumb already is.

A small screen has no room for clutter. **Visual hierarchy** means using size, weight, color and position so the most important thing is noticed first. Each screen should have one clear **primary action** (the main thing the user came to do).

Accessibility means everyone can use the app, including people with low vision, color blindness or limited motor control. The **WCAG AA** standard asks for a **contrast ratio** of at least **4.5:1** between normal-size text and its background (21:1 is black on white; 1:1 is invisible). Never use **color alone** to show meaning; add an icon, text or shape. Support **larger text**: when a user raises the text size in phone settings, the layout should grow instead of cutting words off.

1 Check the Touch Targets

A designer measured the buttons in a music app. For each one, write **Yes** or **No**: does it meet the iOS minimum (44 x 44 points) and the Android minimum (48 x 48 dp)? Assume points and dp are the same size for this check.

Element	Size	Meets iOS (44)?	Meets Android (48)?
a. Play / Pause button	64 x 64		
b. Close (X) icon in a corner	24 x 24		
c. Skip forward button	46 x 46		
d. Song row in a playlist	360 x 56		

e. The Close icon must *look* small. How could the designer keep the small icon but still make it easy to tap?



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2 Reach with Your Thumb

A to-do app puts its **Add Task** button in the top-left corner. Users tap it often, one-handed, with the right thumb.

a. Using the idea of the thumb zone, explain why this placement is a problem.

b. Where should the button go instead? Circle one.

A. Top-right corner **B.** Bottom center or bottom right **C.** Middle of the top title bar

3 Plan the Hierarchy

A bus-tracker home screen shows these five elements. Rank them **1** (most emphasis) to **5** (least).

a. Rank each element.

Rank	Screen element
	Minutes until the next bus arrives
	Route name and stop name
	"Refresh" button
	App logo
	Settings gear icon

b. Why did you rank your number 1 item first? Use the term **visual hierarchy** or **primary action**.

4 Contrast and Color

Circle **Pass** or **Fail** for WCAG AA (at least 4.5:1) for each pair of normal-size text and background.

Text on background	Contrast ratio	WCAG AA for normal text
a. Dark gray text on white	12.6:1	Pass / Fail
b. Light gray text on white	2.3:1	Pass / Fail
c. White text on medium blue	4.6:1	Pass / Fail
d. Yellow text on white	1.1:1	Pass / Fail

e. A sign-up form shows a mistake only by turning the box border red. Who could miss this, and what should the form add?

**Mobile Apps 1: Designing for Mobile** (page 3)**5 Critique a Screen**

Read the description of the **Order screen** in a school snack-ordering app. Find three design problems using this sheet's rules, and suggest a fix for each.

Order screen (phone held in one hand)

- Title "Snack Bar" in huge bold text fills the top third
- Menu items in 9 pt light gray text on white (ratio 2.5:1)
- Out-of-stock items shown only by graying the price
- "Place Order" is a 30 x 30 point text link, top-right corner
- "Clear Cart" is a big bright button at the bottom center
- Text stays the same size even when phone text size is raised

Problem 1: _____

Fix: _____

Problem 2: _____

Fix: _____

Problem 3: _____

Fix: _____

6 Sketch a Wireframe

A **wireframe** is a box-and-label sketch of a screen. Redesign the Order screen as a wireframe.



a. Draw boxes for the title, the menu items and the Place Order button. Label each one. Use one grid square as about 44 points.

b. Where did you put the primary action, and why?

c. How does your design show "out of stock" without color alone?

d. What will you change so the menu still fits with larger text?

