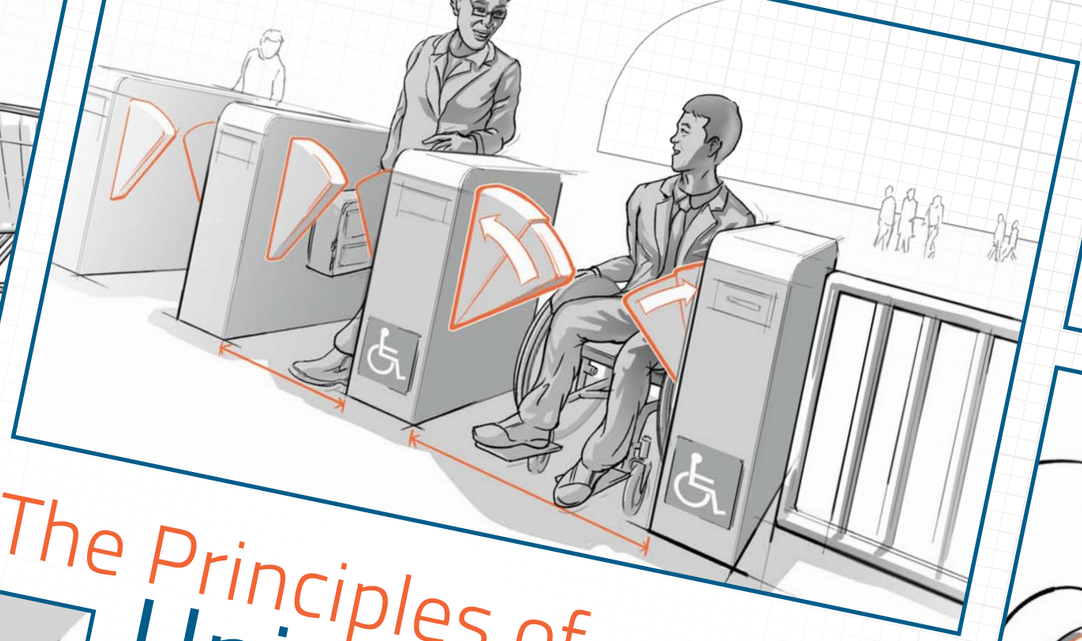
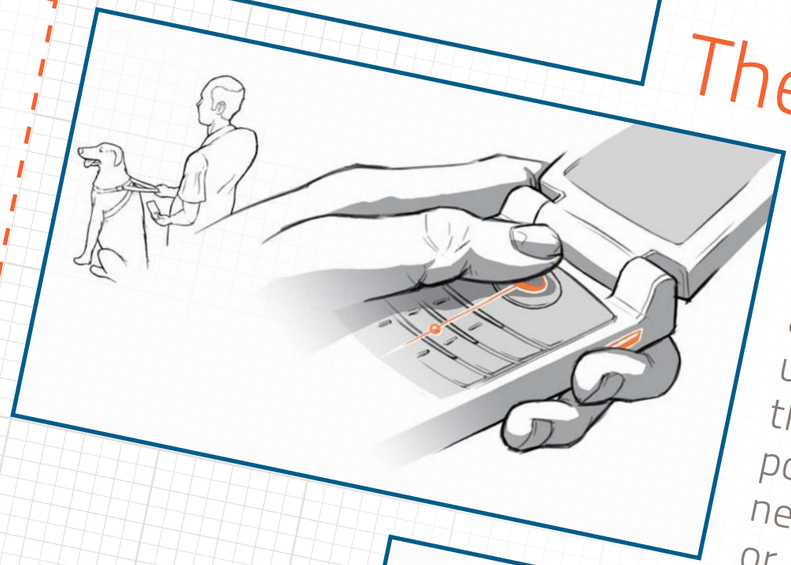
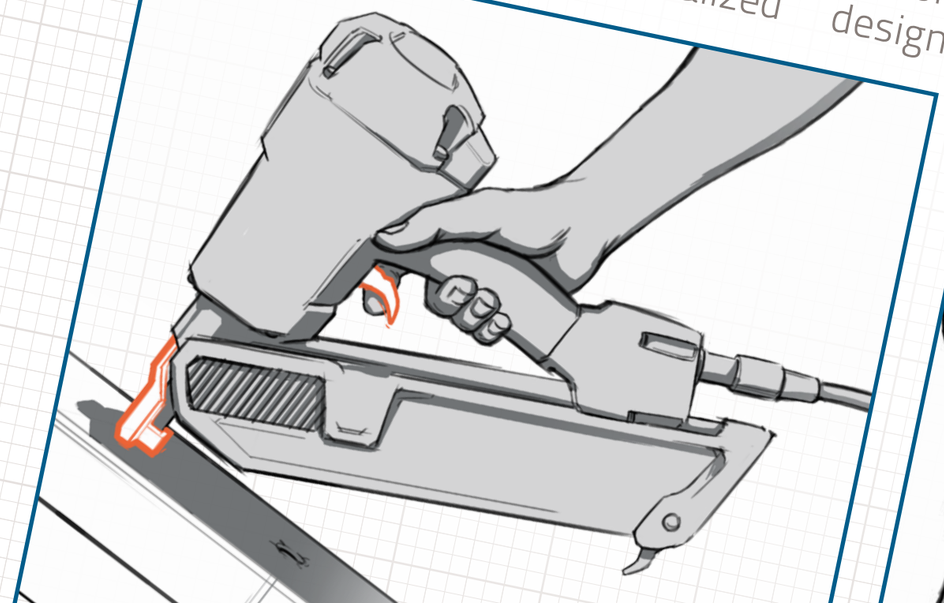
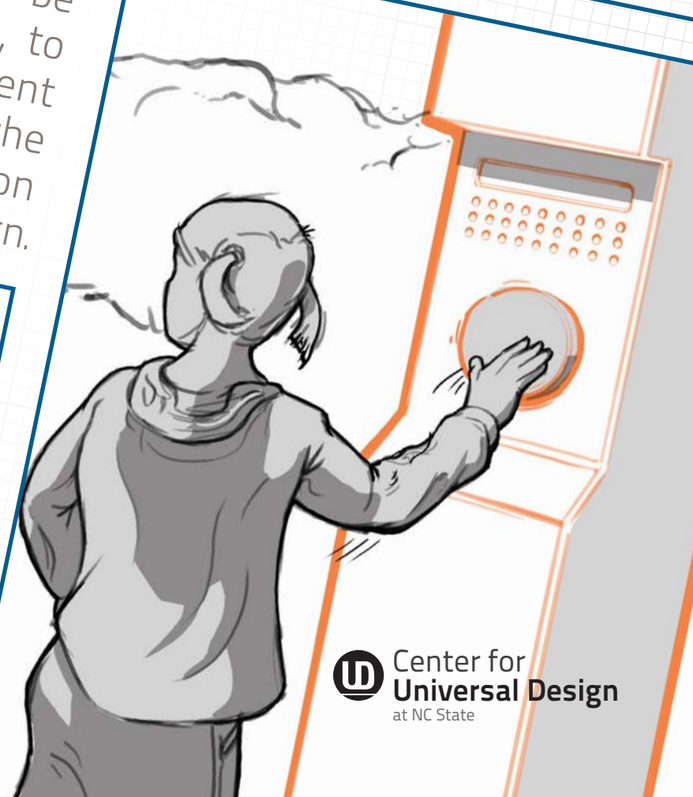




The Principles of Universal Design

The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.





Principles Version 2.0, Compiled by advocates of universal design, listed in alphabetical order: Bettye Rose Connell, Mike Jones, Ron Mace, Jim Mueller, Abir Mullick, Elaine Ostroff, Jon Sanford, Ed Steinfeld, Molly Story, and Gregg Vanderheiden

Please note that the Principles of Universal Design address only universally usable design, while the practice of design involves more than consideration for usability. Designers must also incorporate other considerations such as economic, engineering, cultural, gender, and environmental concerns in their design processes. These Principles offer designers guidance to better integrate features that meet the needs of as many users as possible.

Center for
Universal Design
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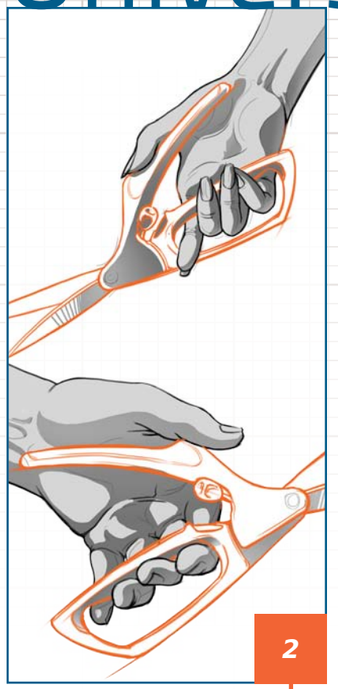
The Principles of Universal Design


1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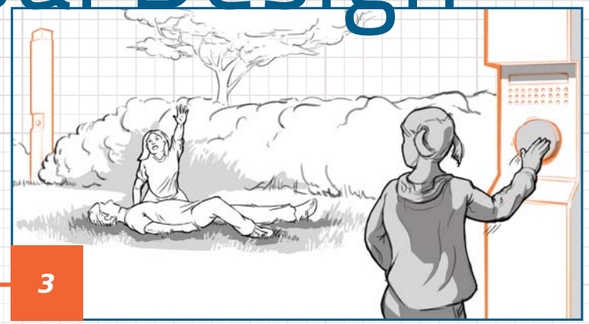
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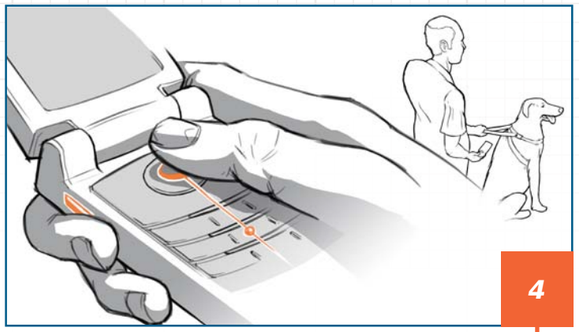
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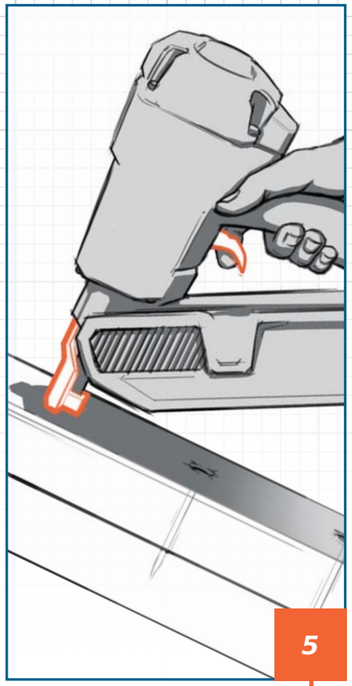
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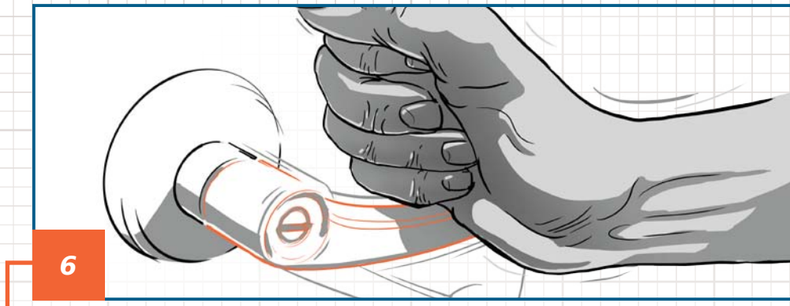
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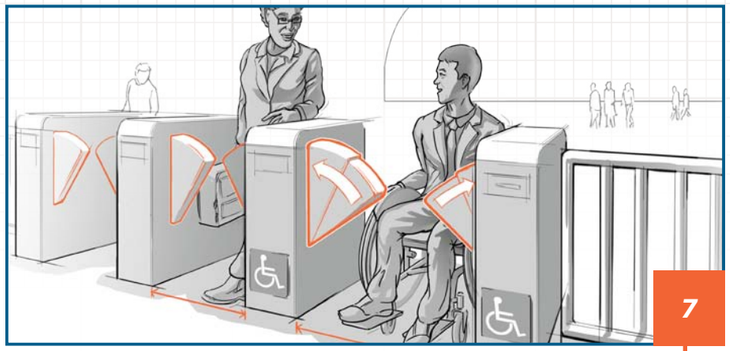
7

	1	2	3	4	5	6	7
PRINCIPLE	**Equitable Use** The design is useful and marketable to people with diverse abilities.	**Flexibility in Use** The design accommodates a wide range of individual preferences and abilities.	**Simple and Intuitive Use** Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or education level.	**Perceptible Information** The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.	**Tolerance for Error** The design minimizes hazards and the adverse consequences of accidental or unintended actions.	**Low Physical Effort** The design can be used efficiently and comfortably and with a minimum of fatigue.	**Size and Space for Approach and Use** Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.
GUIDELINES	1a. Provide the same means of use for all users: identical whenever possible; equivalent when not. 1b. Avoid segregating or stigmatizing any users. 1c. Provisions for privacy, security, and safety should be equally available to all users. 1d. Make the design appealing to all users.	2a. Provide choice in methods of use. 2b. Accommodate right- or left-handed access and use. 2c. Facilitate the user's accuracy and precision. 2d. Provide adaptability to the user's pace.	3a. Eliminate unnecessary complexity. 3b. Be consistent with user expectations and intuition. 3c. Accommodate a wide range of literacy and language skills. 3d. Arrange information consistent with its importance. 3e. Provide effective prompting and feedback during and after task completion.	4a. Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information. 4b. Provide adequate contrast between essential information and its surroundings. 4c. Maximize "legibility" of essential information. 4d. Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions). 4e. Provide compatibility with a variety of techniques or devices used by people with sensory limitations.	5a. Arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated, or shielded. 5b. Provide warnings of hazards and errors. 5c. Provide fail safe features. 5d. Discourage unconscious action in tasks that require vigilance.	6a. Allow user to maintain a neutral body position. 6b. Use reasonable operating forces. 6c. Minimize repetitive actions. 6d. Minimize sustained physical effort.	7a. Provide a clear line of sight to important elements for any seated or standing user. 7b. Make reach to all components comfortable for any seated or standing user. 7c. Accommodate variations in hand and grip size. 7d. Provide adequate space for the use of assistive devices or personal assistance.
EXAMPLES	• Power doors make visiting public spaces easier for all users. • E-mail makes communication easier for everyone, including people who have trouble communicating via phone.	Large grip scissors accommodates use with either hand and allows alternation between the two in repetitive tasks.	• Public emergency stations utilize recognized emergency colors and a simple design to quickly convey function to passers-by. • Intuitive ATM interfaces allow use without instruction or training.	Small bumps on a cell phone keypad tell the user where important keys are without requiring the user to look at the keys.	The "sequential trip" mechanism on a nail gun prevents accidental firing when the tool is not pressed against an object.	Door lever does not require grip strength to operate, and can even be operated by a closed fist or elbow.	Wide gates at subway stations accommodate wheelchair users as well as commuters with packages or luggage.