Welcome!
Universal design for learning (UDL) is based on the premise that design interventions for student with disabilities (primary beneficiaries) can also improve educational outcomes for all students (secondary beneficiaries). The purpose of this presentation is to provide practical strategies for proactively valuing learner differences. Participants will receive a variety of resources, strategies, and tools to assist them in implementing UDL in the classroom.
Historical Foundations
Historical Foundations

- 1997 – Reauthorization of the Individuals with Disabilities Act (IDEA) in the U.S.; increasing concerns about how students with disabilities could access the general curriculum

- 1999 – Center for Applied Special Technology (CAST) develops and presents tenets of UDL to research community; first wave of national attention to UDL in the U.S.

- 2002 – CAST publishes an elaborated version of UDL framework; situates the framework in current educational, scientific, and social landscape; second wave of national attention to UDL in the U.S.

- 2004 – Reauthorization of IDEA includes and defines “universal design”

- 2008 – Higher Education Opportunity Act refers to UDL as “scientifically valid” despite limited research of its effectiveness as an intervention/approach
Present

- UDL advocacy in the U.S. went from a framework to federal law

- Example of one state’s efforts to scale UDL

- A Route for Every Learner: Universal Design for Learning (UDL) as a Framework for Supporting Learning and Improving Achievement for All Learners in Maryland, Prekindergarten through Higher Education
  [http://eric.ed.gov/?id=ED519800](http://eric.ed.gov/?id=ED519800)

- There is considerable confusion about how to "do" UDL.
Design Interventions
**Procrustean Design**

- Design like Procrustes.

- Refers to a Greek mythology about Procrustes who was a robber who befriended travelers by offering them a bed for the evening.

- The reality was that he had two beds. If the traveler was short, he would stretch the limbs of to make them conform to the length of the bed. If the traveler was tall, he would amputate the limbs to make them conform to the length of the bed.

- The user is fitted to the product.
An unfortunate framework used by many designers is known as "ego design." That is, assuming that all users are like the designer.

In the context of instructional design, ego design is a fatal flaw that embeds barriers into instructional materials.
Sometimes authors attempt to create learning materials using specifications that describe the mythical average student. This approach is known as design for the mean and results in a very narrow conception of the students who will use the learning materials. Practically everyone outside the mean is excluded.

Using this approach, the designer is focused on creating a product that will reach the largest number of people to ensure that it is commercially successful.
Design for All

- Design for All or Inclusive Design.

- This does not mean that a designer has to design for all six billion people on earth, but it means that throughout the design process he or she must take into consideration that as few people as possible are excluded.

- In reality, it is not possible to design for all.
A framework for implementing universal design engineering to enhance the accessibility and usability of educational materials. Briefly, it involves (a) operationalizing the characteristics of diverse students in order to produce design requirements that will serve as the blueprints for instructional design, (b) transforming information into digital learning materials that have properties known to generate positive student learning outcomes, (c) subjecting new learning materials to rigorous testing to determine whether or not the materials do in fact produce the desired learning outcomes for specific targeted students and/or the majority of students, and (d) determining the cost-benefit of the intervention since there are constraints associated with every product design project.
Academic Diversity
Anticipating a Range of Individual Differences in the Classroom

- Most classrooms are designed to address a narrow range of individual differences.
- One of the problems to-date with UDL is that there has not been enough attention devoted to academic diversity – that is, what is the range of individual differences we should proactively anticipate?
- How many of you work in classrooms that have students who do not read at grade level?
- How many of you work in classrooms that have students who speak languages at home other than Norwegian?
New Approaches to Thinking About Academic Diversity

- Rose and Meyer (2002) – the curriculum is disabled, not the students

- Tomlinson (2004) – think about learning differences as a Mobius Strip (a continuum of knowledge and skills with no clear demarcations)

- McLeskey and Waldon (2007) – classrooms must be places where differences are ordinary

- Wormeli (2006) – fair isn’t always equal
Academic Diversity Blueprint
Proactively Valuing Academic Differences

Without explicit attention to academic diversity, I do not believe UDL will achieve its potential (Edyburn, 2010; Rao, Ok, & Bryant, 2014).

In order to design UDL interventions and measure their effectiveness, we need some additional work.

- Who has a special need? (Primary Beneficiaries)
- Who else can benefit? (Secondary Beneficiaries)
Receptive Language
Background Knowledge

Reading
Decoding
Comprehension

Ambulate
Gross Motor Skills
Fine Motor Skills

Expressive Language
Written Expression

Hard of Hearing
Deaf

Memory
Persistence

Problem Solving

Low Vision
Blind

Diversity Blueprint
# Aligning Instructional Design With Diversity Characteristics to Create an Academic Diversity Blueprint

<table>
<thead>
<tr>
<th>Design Feature</th>
<th>Primary Beneficiary</th>
<th>Secondary Beneficiary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web-based curriculum created in accordance with accessibility standards</td>
<td>Students who are blind may access the information with a screen reader</td>
<td>Any student can access the information by using a web browser</td>
</tr>
<tr>
<td>Physical characteristics of the text should be alterable by the reader</td>
<td>Students with low vision</td>
<td>Any student who feels the need to adjust the text because of glare, tiredness, or undiagnosed vision problem</td>
</tr>
<tr>
<td>Text should be tiered to accommodate different interests and reading abilities</td>
<td>Students who lack background knowledge, students who struggle to read grade-level text, advanced students who would like to be challenged</td>
<td>All students can seek the level that is of most interest and appropriately challenging for them</td>
</tr>
<tr>
<td>Reading materials that offer choice enhances motivation and engagement</td>
<td>Reluctant readers with low motivation and interest to engage in reading</td>
<td>All students benefit from the opportunity to choose their reading materials</td>
</tr>
<tr>
<td>Audio support should be available for readers who need this support</td>
<td>Students with low decoding skills and poor fluency may benefit from hearing the information read aloud</td>
<td>Any student who would like the opportunity for a media shift that transforms a reading task into a listening activity</td>
</tr>
<tr>
<td>Text should be available in additional languages for English language learners</td>
<td>Learners whose first language is not English</td>
<td>Any student who would like the opportunity to read the information in a second language</td>
</tr>
</tbody>
</table>
Instructional Planning Status Quo

Typical Teacher Lesson Plan Book

<table>
<thead>
<tr>
<th>Monday</th>
<th>1st Hour</th>
<th>2nd Hour</th>
<th>3rd Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Each student is responsible for completing three activities from the following choices. Your three activities must follow the rules of tic-tac-toe (i.e., three in a row).
Each student is responsible for completing three activities from the following choices. Your three activities must follow the rules of tic-tac-toe (i.e., three in a row).

<table>
<thead>
<tr>
<th>Activity 1</th>
<th>Activity 2</th>
<th>Activity 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Find an article in the news within the last 2 months that involves cells. Type a summary and attach it to the article. (Hint: search Cell Biology)</td>
<td>Pick an organelle and write a story, “A Day in the Life of a ______.” Make sure it is at least 2 pages long and includes at least 4 other organelles.</td>
<td>Create a playbill about the cell. Decide who is the star and who are the supporting actors. Make sure you explain why you picked what you did in your play bill.</td>
</tr>
<tr>
<td>Create a “Who am I?” game using the parts of the cell. Pick five parts of the cell. Write 5 clues for each part, starting with hard clues and the last being the easiest clue.</td>
<td>Create a concept map about the cell with at least 3 tiers of detail. Use the website: <a href="http://www.inspiration.com/Freetrial">http://www.inspiration.com/Freetrial</a></td>
<td>Write a 2 page paper about how a certain structure of the cell was discovered and what it’s job entails in the cell.</td>
</tr>
<tr>
<td>Write a 2 page paper about a person who discovered an organelle or another notable cell biologist. Include their background and any other discoveries they made in their careers. <a href="http://en.wikipedia.org/wiki/Cell_biology">http://en.wikipedia.org/wiki/Cell_biology</a></td>
<td>Create a song, rap or poem to illustrate the job of one organelle in the cell.</td>
<td>Create a 3-D representation of the major aspects of a cell, including but not limited to: nucleus, mitochondria, Golgi apparatus, cell wall, cytoplasm, and endoplasmic reticulum</td>
</tr>
</tbody>
</table>
Access to Text
Bear

From Wikipedia, the free encyclopedia

This article is about the mammalian family. For the koala and extinct bear-like marsupials, see Phascolarctidae.

"Ursine" redirects here. For the village, see Ursine, Nevada. For other uses, see Bear (disambiguation).

Bears are mammals of the family Ursidae. Bears are classified as caniforms, or doglike carnivorans, with the pinnipeds being their closest living relatives. Although only eight species of bears are extant, they are widespread, appearing in a wide variety of habitats throughout the Northern Hemisphere and partially in the Southern Hemisphere. Bears are found on the continents of North America, South America, Europe, and Asia.

Common characteristics of modern bears include large bodies with stocky legs, long snouts, shaggy hair, plantigrade paws with five nonretractile claws, and short tails. While the polar bear is mostly carnivorous, and the giant panda feeds almost entirely on bamboo, the remaining six species are omnivorous with varied diets.

With the exception of courting individuals and mothers with their young, bears are typically solitary animals. They are generally diurnal, but may be active during the night (nocturnal) or twilight (crepuscular), particularly around humans. Bears possess an excellent sense of smell and, despite their heavy build and awkward gait, are adept runners, climbers, and swimmers. In autumn, some bear species forage large amounts of fermented fruits, which affects their behaviour. Bears use shelters, such as caves and burrows, as their dens; most species occupy their dens during the winter for a long period (up to 100 days) of sleep similar to hibernation.

Bears have been hunted since prehistoric times for their meat and fur. With their
Bear

From Wikipedia, the free encyclopedia.

This page is about the mammal. For other uses, see Bear (disambiguation).

Bears are a group of large mammals. They form the family Ursidae, in the suborder Caniformia of the order Carnivora. There are 9 living bear species.

- Family Ursidae: Bears
  - Giant panda, *Ailuropoda melanoleuca*
  - Specieaked bear, *Tremarctos ornatus*
  - Brown bear, *Ursus arctos*
  - Polar bear, *Ursus maritimus*
  - American black bear, *Ursus americanus*
  - Asian black bear, *Ursus thibetanus* or *SeIanarctos thibetanus*
  - Sloth bear, *Melursus ursinus*
  - Sun bear, *Ursus malayanus*

Appearance [change|change source]

Bears usually have a big body with short and thick legs. They only have a very short tail. They have small eyes and round ears. They usually have longer, shaggy fur. On each foot they have five claws, which they cannot pull back. They have very good senses of smell and hearing. They can stand up on their back legs. Usually bears can climb and swim very well.

Life [change|change source]

There are monthly arhives at nigh for the Polar Bear. Anma hears *hikarnate* that means their...
Text Compactor
http://textcompactor.com/

Follow these simple steps to create a summary of your text.

**Step 1**
Type or paste your text into the box.

**Step 2**
Drag the slider, or enter a number in the box, to set the percentage of text to keep in the summary.

---

**Step 3**
Read your summarized text. If you would like a different summary, repeat Step 2. When you are happy with the summary, copy and paste the text into a word processor, or text to speech program, or language translation tool.
Tiered Text
The Solar System

What is the solar system? It is our Sun and everything that travels around it. Our solar system is elliptical in shape. That means it is shaped like an egg. The Sun is in the center of the solar system. Our solar system is always in motion. Eight known planets and their moons, along with comets, asteroids, and other space objects orbit the Sun. The Sun is the biggest object in our solar system. It contains more than 99% of the solar system's mass. Astronomers think the solar system is more than 4 billion years old.

Astronomers are now finding new objects far, far from the Sun which they call dwarf planets. Pluto, which was once called a planet, is now called a dwarf planet.
The brain has the size and appearance of a small cauliflower. But thanks to its 86 billion nerve cells (and as many glial cells), we can think, plan, talk, imagine, and so much more.

Scientists identify four major lobes on the surface of each hemisphere (half) of the human brain. Run your cursor over this picture of the brain to learn about each of these lobes.

There is also a fifth lobe that cannot be seen unless you look inside the brain.
Newsela
https://newsela.com

SCIENCE

NARROW YOUR CHOICES
GRADE LEVEL
READING STANDARD
LANGUAGES

ARTICLES

11.12.15
Calif. town overrun by bears descending dry mountain seeking food

11.11.15
Students test reality of "The Martian" movie in Mars-like soil study

11.11.15
It's a shocker: Electric eels bend their bodies to amp up voltage

11.10.15
Flea bite is likely cause of Oregon teen's bubonic plague

11.09.15
President Obama says no to Keystone XL oil pipeline

11.09.15
Africa's lions are disappearing and humans have themselves to blame
"Kid"-napping ends when baby goat is reunited with its mother
November 13, 2015
650L 880L 1000L 1120L
1 comments | Log in to post a comment | Take the quiz

Migrant children get a break at play center
November 12, 2015
570L 840L 1070L 1430L
8 comments | Log in to post a comment | Take the quiz

What will happen if the volcano under Yellowstone erupts?
November 12, 2015
540L 700L 960L 1180L
48 comments | Log in to post a comment | Take the quiz
Audio Support
Natural Reader

http://www.naturalreaders.com/index.html
Multilingual Support
Mae Cwningen a'i ffrind Hwyaden yn hoffi chwarae. Weithiau maen nhw'n sgipio, weithiau nhw'n chwarae taflu pêl, ond hoff gêm Cwningen a Hwyaden ydy chwarae...
During the middle Oligocene in Europe about 30–25 Ma ago, the family also included the younger genera _Pliophocaenictis_ (ca. 25–20 Ma), and _Pliophocaenictus_ (15–7 Ma).

A _Cephalogale_-like species gave rise to the genus _Ursavus_ during the early Oligocene (30–28 Ma); this genus proliferated into many species in Asia and is ancestral to all living bears. Species of _Ursavus_ subsequently entered North America, together with _Amphicyonodon_ and _Cephalogalea_, during the early Miocene (21–18 Ma).

Members of the living lineages of bears diverged from _Ursavus_ between 15 and 20 Ma ago,[10][11] likely via the species _Ursavus_ _elminensis_. Based on genetic and morphological data, the _Ailuropoda_ (pandas) were the first to diverge from other living bears about 19 Ma ago, although no fossils of this group have been found before about 5 Ma.[12]

The New World short-faced bears (Tremarctinae) differentiated from Ursinae following a dispersal event into North America during the middle-Miocene (about 13 Ma). They _invaded South America_ (~1 Ma) following formation of the _Isthmus of Panama_.[13] Their earliest fossil representative is _Pliocanctos_ in North America (~10–2 Ma). This genus is probably the direct ancestor to the North American short-faced bears (genus Arctodus), the _South American short-faced bears_ (Arctotherium), and the _spectacled bears, Tremarctos_, represented by both an extinct North American species (_T. floridanus_), and the lone surviving representative of the Tremarctinae, the South American _spectacled bear_ (_T. ornatus_).

The subfamily Ursinae experienced a dramatic proliferation of taxa about 5.3–4.5 Ma ago, coincident with major environmental changes; with the first members of the genus _Ursus_ also appearing around this time.[12] The _sloth bear_ is a modern survivor of one of the earliest lineages to diverge during this radiation event (5.3 Ma); it took on its peculiar morphology, related to its diet of termites and ants, no later than by the early Pleistocene. By 3–4 Ma ago, the species _Ursus minimus_ appears in the fossil record of Europe; apart from its size, it was nearly identical to today’s _Asian black bear_. It is likely ancestral to all bears within Ursinae, perhaps aside from the sloth bear. Two lineages evolved from _U. minimus_; the black bears (including the _sun bear_, the _Asian black bear_, and the _American black bear_); and the brown bears (which includes the _polar bear_). Modern _brown bears_ evolved from _U. minimus_ via _Ursus arctos_, which itself is ancestral to both the extinct _Pleistocene cave bear_ and today's brown and polar bears. Species of Ursinae have migrated repeatedly into North America from Eurasia as early as 4 Ma during the early Pliocene.[14]

The fossil record of bears is exceptionally good. Direct ancestor-descendant relationships between individual species are often
Here is a sample text passage

Her er et eksempel på tekst passasje


Concluding Comments, Q&A
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