Ideas:
A lot of the terms are linked. For many, coming up with three to four facts will require a holistic understanding of the concepts.

In our 3 slide overview of keywords, the words that are not discussed in the remainder of the review are highlighted. Does not signify relative importance of the terms.
<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
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<tbody>
<tr>
<td>Christian Thomsen</td>
<td>(1788-1865) Curator of Danish National Museum in Copenhagen in 1816. Established the 3-Age System of Stone, Bronze, and Iron</td>
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<tr>
<td>Andre Leroi-Gourhan</td>
<td>Studied cave art and applied Freudian ideas. BS.</td>
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<tr>
<td>Carl Jung</td>
<td>Coined the term &quot;Collective unconscious,&quot; a term of analytical psychology</td>
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<tr>
<td>David Quammen</td>
<td>&quot;We are afraid of being pray.&quot; Believed that human survival instincts drive self awareness.</td>
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<tr>
<td>Karl Polyani</td>
<td>(1886-1964) Austrian who developed the 3 Basic Patterns for Exchange (Reciprocity, Redistribution, and Market Exchange)</td>
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<td>Maria Reiche</td>
<td>Self-appointed Caretaker for the Nazca Lines in Peru.</td>
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<tr>
<td>David Graeber</td>
<td>Anthropologist at the University College London who organized &quot;Occupy Wallstreet.&quot;</td>
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<tr>
<td>Concepts</td>
<td>Description</td>
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<tr>
<td>Pyrotechnology</td>
<td>Used on synthetic materials like pottery, glass, and metal</td>
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<tr>
<td>Technological Determinism</td>
<td>To understand human progress over time, we use artifacts as cultural markers. Technology serves a purpose as a paralanguage for humans and is an additive process that gets better over time.</td>
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<tr>
<td>Diffusion</td>
<td>Spread of ideas, technology, or style over space. Ex. Egyptian pyramid</td>
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<tr>
<td>Hyper-Diffusion</td>
<td>When an idea or technology or style starts one place and spreads quickly to others. Ex. Roman pepper</td>
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<tr>
<td>Cultural Koine</td>
<td>Commonalities on a cultural level. Ex. Swastikas</td>
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<tr>
<td>Competitive Emulation</td>
<td>Keeping up with the Joneses. Trying to outdo another.</td>
</tr>
<tr>
<td>Paleolinguistics</td>
<td>Sub-branch of historical linguistics. Linguistic analysis of past speech - given writing - to study language family roots/origins</td>
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<tr>
<td>Anthropocentrism</td>
<td>The idea that the earth or sun revolves around us. At one point, this was literally the belief, but more broadly applies the idea that human values are the best way to interpret reality. Think: Plato's allegory of the cave: Link</td>
</tr>
</tbody>
</table>
| Correspondence Theory    | ● Going from present to past, bridging the gap.  
● Truth or falseness of a concept based on how it relates (corresponds) to the world and whether it is an accurate description                   |
<table>
<thead>
<tr>
<th>Things</th>
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<tbody>
<tr>
<td><strong>Faience/Faenza/Tjehnet</strong></td>
<td>Faenza -- Italian town which was a center for faience but didn't invent it. Egyptian &quot;tjehnet&quot; was a symbol of rebirth.</td>
</tr>
<tr>
<td><strong>Silk Road</strong></td>
<td>Whole exchange systems can be reconstructed as well as the movement of goods as long as sources of the exchange and goods can be identified</td>
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<tr>
<td><strong>Obsidian</strong></td>
<td>Volcanic glass. Can be traced to its source which can reconstruct trade because each volcanic eruption produces distinctive type of obsidian. Archaeometry: Obsidian hydration test tells age</td>
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<tr>
<td><strong>Fox P2 Gene</strong></td>
<td>Human language gene</td>
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<td><strong>Manuport</strong></td>
<td>A natural object that has been moved by humans. That is, it is unmodified but moved.</td>
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<tr>
<td><strong>Malaria and the Fall of Rome</strong></td>
<td>Malaria brought from Africa by cargo ship was found in infant bones in amphorae through DNA testing.</td>
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<td><strong>Uluburun Shipwreck</strong></td>
<td>Shipwreck trading vessel from 1300 BCE with cargo found in 1982 off the Turkish coast by George Bass. Had 10 tons of copper ingots and amphorae, African wood, beads, ivory, etc. Indicates a trade circuit and port system.</td>
</tr>
</tbody>
</table>
1. A chunk of obsidian (what's that?) that was brought from the source back to camp.

2. A chunk of obsidian knapped into an arrowhead.
Identifying warfare in archaeology

1, 2: The castle was re-utilized during WWII

3: Dover Castle re-utilized during Napoleonic wars ca. 1830s
Identifying warfare in archaeology

**ABSTRACT:** To provide some insights into the nature and role of warfare in the rise, development, and decline of Classic Maya civilization, this article discusses spear, dart, and arrow points used by the Classic Maya elites at the rapidly abandoned fortified city of Aguateca, Guatemala, and [arrow points, spear and darts] temporal and spatial distribution patterns in and around Copan, Honduras. Both the royal family and elite scribes/artists at Aguateca used spear and dart points for intergroup human conflict as well as for artistic and craft production under enemy threat. An important implication is that the ruler and elite scribes/artists were also warriors. The unusually high concentrations of identifiable weaponry at the Early Classic hilltop center of Cerro de las Mesas as well as the Acropolis and other Late Classic locations in the Copan Valley, along with other lines of evidence, indicate that warfare was critical in the development and downfall of Classic Maya civilization at Copan.
Mural of Maya warfare from Maya site, Bonampak
Identifying warfare in archaeology

REMEMBER: Tumuli = type of burial mound

**ABSTRACT:** Skeletal remains of Pazyryk warriors unearthed in a recent archaeological excavation in the Mongolian Altai offer a unique opportunity for verifying ancient histories of warfare and violence given by Herodotus in the fifth century BC. The aim of this paper is to analyze the evidence for bone trauma provided by the skeletal remains of these Pazyryk warriors with a particular focus on violence-related injuries. Seven individuals exhibited a total of 14 traumatic injuries. Six of these injuries (43%) showed evidence of bone remodelling and eight injuries (57%) were morphologically compatible with a perimortem (at or near time of death) origin.
Identifying warfare in archaeology

Contd

origin. Twelve injuries (86%) were related to interpersonal violence, most likely caused by weapons similar to those found in Pazyryk tombs (battle-axes, daggers and arrowheads). ...Despite the small number of Pazyryk skeletons analyzed, the pattern of traumatic injuries observed appears to be in agreement with that documented in conflicts related to raids or surprise attacks, and not a result of routinized or ritualized violence. These findings contribute new data to osteological evidence from Scythian burial sites.
Evolutionary Archaeology or Evolutionary Ecology

- Essentially Darwinian - survival of the fittest, but applied to cultural evolution
  - applied when looking at technological change over time - likely that technology change is the result of evolutionary competitive selection processes
    - related to TECHNOLOGICAL DETERMINISM
  - also, how people choose to make a living
  - Where people choose to live

- ANY PROBLEMS HERE? What are other factors that would account for cultural change?
  - e.g. what about individual decision-making or social and political influences?
Identifying cognition among early hominids

Link to evolutionary archaeology: ...the development of humanity is based on cultural and cognitive factors, not on genetically determined abilities to improve access to resources (Bednarik 1990: 2)

- early intentional markings
- manuport collections found in early hominid contexts
- elaborating natural rock edges, etc
  - This reshaping of salient aspects of the physical world not only resulted in an increasing consciousness of the physical reality and a feedback on the mark making behavior, but inevitably also in an increasingly complex cognitive environment and in the emergence of new taxonomising mental processes (3)
Through DNA testing, we have discovered that Neandertals had the same version of the Fox P2 Gene as modern humans. This advances theory about Neanderthal cognition if indeed, they had the ability to vocalize. However, there is still much debate about using this gene as an indicator.
What were they thinking?
Cognitive Archaeology

"Analysis of symbols, styles, designs and other expressive forms of culture"

Werner Herzog's film about cave paintings dated to ~32,000 y.a. discovered in Chauvet-Pont-d'Arc, France: Cave of Forgotten Dreams Trailer

● Dated because drawings done in charcoal.

NY Times article about the movie:
"Much like...the explorer who cried out, “They were here” on seeing a painted mammoth, many of the researchers in the documentary seem deeply moved by the cave. In some ways they are communing with the dead, summoning up the eternally lost. For his part, Mr. Herzog uses the paintings to riff on the origin of art, at one point connecting overlapping images of horses — some of which, with their open mouths, convey a sense of movement — to cinema itself."
Carl Jung (1875-1961)

- Coined term: "Collective Unconscious"
  - Universal symbols repeat
  - Jung ties into the study of Cognitive Archaeology
  where the presence of universal symbols and/or prevalence of certain symbols in certain contexts reveals underlying meaning about what pre/historical people were actually thinking.

I'm Carl Jung. Collective unconscious!
Cultural Koine

EXAMPLE: Swastika

Necklace, 1st Millenia B.C.E., Iran

Nazi Banner, 1940s C.E., Germany
Uluburun Shipwreck

Found in 1982 in 50 m of water off Turkish coast. Excavated 1984-1994 by George Bass and Texas A&M.

1300 BCE. 10 TONS of copper ingots called "oxhides" as well as amphorae, African ebony wood, glass beads, Baltic amber, hippo and elephant ivory.

Final voyage on eastern Med. Coast... Trade circuit! Ports!

WTF is an ingot?
Uluburun Trade

N. Africa, Egypt, Phonecia, etc. We can plot the trade.
The Silk Road
The Silk Road

• Trade route linking Europe to China: gold, silver, spices, silk and glass
• Although Marco Polo thought to have instigated this trade ca. the 13th c. C.E., evidence proves otherwise
• LINE OF EVIDENCE 1
  ○ written documents, dated to first centuries C.E., pose that the trade started earlier.
  ○ documents discovered in the Tarim Basin in China towards the end of the 19th c. C.E., written in many languages including an unknown Indo-European language, dubbed "Toucharion"
  ○ because known Indo-European language is divided between East and West how an Indo-European language closely related to Celtic and Italic got so far from sources was mystery
  ○ This represents a use of PALEOLINGUISTIC evidence
Silk Road

LINE OF EVIDENCE 2:
- Frescoes dating 4-7th c. C.E. show Buddha and followers along with Caucasian men dressed as knights with long swords

LINE OF EVIDENCE 3
- Mummies from China, found near Tarim Basin, with "Western" features. Earliest mummies radiocarbon dated to ca. 2000-1500 B.C.E. Later mummies date 1000 B.C.E. - 500 C.E.
  - found associated with western agricultural products and animal domesticates
  - preserved clothing nearly identical to Celtic styles
  - DNA testing found genetic evidence - haplogroup H mtDNA - linking them to European populations
Identifying Migration in Archaeology

- Findings from the Silk Road present some examples of migration evidence
  - mitochondrial DNA evidence shows genetic origins.
  - art depicting contact scenarios
  - language system travel
- More common evidence is people carrying aspects of their culture with them through migration
  - material culture evidence of migration
  - Ex: evidence of Kayenta and Salado migrants (ancestors of ancient Puebloan peoples) joining Upper Gila cultures ca. 1300 C.E.. Visible in Kayenta and Salado ceramic styles/traditions becoming incorporated into Upper Gila styles: article
- Close link between migration and trade relationships
  - connection between the southwest and Mesoamerica found via cacao at Chaco Canyon: article
Diffusion vs. Independent Invention

Southwestern vs Mesoamerican ball courts

Maya ball court - Mesoamerican game with origins ca. 1400 B.C.E. to present

Wupatki, cultural height ca. 1100-1250 C.E., near Flagstaff

Monte Alban, height ca. 100 B.C.E to 500 C.E., Oaxaca, Mx
Great Pyramids in Giza, Egypt; all pyramids estimated to be built between ca. 2686-1292 B.C.E.

Far pyramid is Pyramid of the Sun at Teotihuacan, Mexico. Estimate to be built - various overlapping phases - between 100-700 C.E.
"Real Problem 1: Given two super-powers (U.S. and U.S.S.R.) in international competition. The U.S.S.R., which has given highest priority to science education, wins world acclaim by launching Sputnik I.

Question: How does the U.S. respond?

Answer: The U.S. overhauls its anti-intellectual Zeitgeist, intensifies its Outer Space Program, and gives loans, grants, and encouragement to advance science education--all loans in accordance with the principle of competitive emulation."
Competitive Emulation

In Anthropology:
- Debt forgiveness as a strategy of Competitive Gift-Giving to maintain social harmony *a la* David Graeber
  - [David Graeber: Occupy Wall Street](#)
- Performative building of monumental architecture
- Ancient Roman tyrants would compete and show power through the size of the temples they constructed.

Main Idea: "Keeping up with the Jones"
David Graeber  
1961-Present  

Anthropologist at the University of London. Organized Occupy Wallstreet. Studied distribution, production, and consumption.
Pyrotechnology! The control and manipulation of fire to make life easier

Pyrotechnology was used to create lime cements, clay ceramics, glazes, enamels, faience, glass, and metals in antiquity. *Very difficult technology to master; much trial and error present in archaeological record.
Experimental Archaeology

- Use ancient techniques - such as ancient pyrotechnology - to discover how and why things might have been done in the past
- Can be linked with ethnoarchaeology, which is sometimes used as a starting point for experimental investigations

Think of:
- Dr. Soren's building of a Corinthian structure to test how it might break down in the wake of an earthquake
- Dr. Schiffer's ceramic making
- Book examples:
  - grinding maize with a mano and metate to look at wear pattern formations
  - Flintknapping to look at how lithics constructed and study wear patterns attributed to different possible uses
Malaria and the Fall of Ancient Rome

DNA testing on bones of aborted fetuses found in amphorae at Lugnano in Ancient Rome have indicated a Malaria epidemic.

Amphorae and people on cargo ships from Africa brought Malaria which people tried to treat with witchcraft rituals involving honeysuckle and puppies :(

I carry Malaria!!!