

# **EXTRACTING (I.E. ANALYZING) ARGUMENTS**

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## The Pedagogical Challenge

- Arguments can be difficult for students to follow because following an argument requires students track the reasoning by understanding the logical relationship between the claims. It's easier to focus upon the claims themselves than upon the logical relationships between them.
- Graphically representing arguments (i.e. argument mapping) is an excellent way to help students see the logical relationship between claims.
- It's unrealistic to expect students to master argument mapping in a class not devoted to mapping. Fortunately, the skills related to and developed by mapping are much more important than mapping itself.
- We can use mapping in class to help students develop these "mapping-related" skills without expecting students to map entire arguments on their own:
  1. We can present mapped arguments, or parts of arguments, for class discussion.
  2. We can map arguments, or parts of arguments, with students.
  3. We can teach students to track the reasoning of an argument by internalizing a series of questions.

## Tracking the Reasoning

1. What's the main conclusion?
2. What's being asserted here?
  - This may involve dividing sentences into parts.
  - This may involve summarizing multiple sentences into a single claim.
3. Is that idea important?
4. If so, how is that idea related to what's gone before (other than the ultimate conclusion)?
  - i. **Reason / Conclusion**
    - Inference indicator expressions help.
  - ii. **Dependent Reason** (Ask "What follows from these ideas?" and fill in the subconclusion if it's missing.)
    - The Puzzle Piece Test helps.
  - iii. **Independent Reason**
    - Identifying distinct themes helps.
  - iv. **Objection to a Claim**
  - v. **Objection to an Inference** (Objection to an Implicit Claim)
5. Return to 2.

1) "Philosophy is a waste of time. Therefore, philosophy has no place in a university curriculum."

1) "2. Philosophy is a waste of time. Therefore,  
1. philosophy has no place in a university  
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↓  
1

2) "Anyone with a Ph.D. works in a philosophy department because 'Ph.D.' means 'Doctor of Philosophy.'"

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3) "I'm not hallucinating all the time. I know this  
because other people usually indicate that they  
see and hear the same things that I do, which  
means that the things that I seem to see and  
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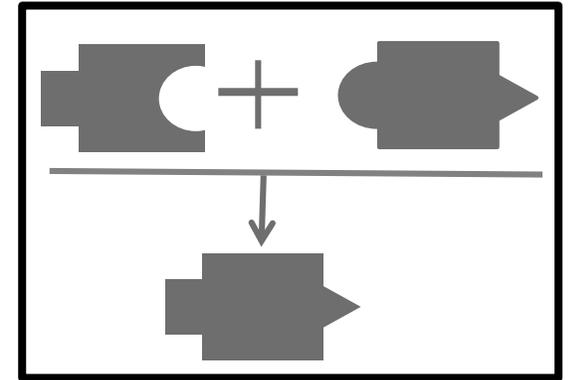
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↓  
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- ✓ Inference indicators like "therefore" and "because" can help students to identify "reason / conclusion" relationships.
- ✓ Students have a harder time with reason indicators like "because" than they do with conclusion indicators like "therefore."
- ✓ "Because R, C" has the inference indicator at a place where the inference isn't.
- ✓ "C because R" has narrative order reverse the logical order (i.e. the reason *follows* the conclusion but the conclusion *follows from* the reason).

4) "Eyes are composed of many individual parts working together. Things composed of many individual parts working together were created by an intelligent a designer. Therefore eyes were created by an intelligent designer."

4) "2. Eyes are composed of many individual parts working together. 3. Things composed of many individual parts working together were created by an intelligent a designer. Therefore 1. eyes were created by an intelligent designer."

$$\begin{array}{r} 2 \quad + \quad 3 \\ \hline \quad \downarrow \\ \quad 1 \end{array}$$



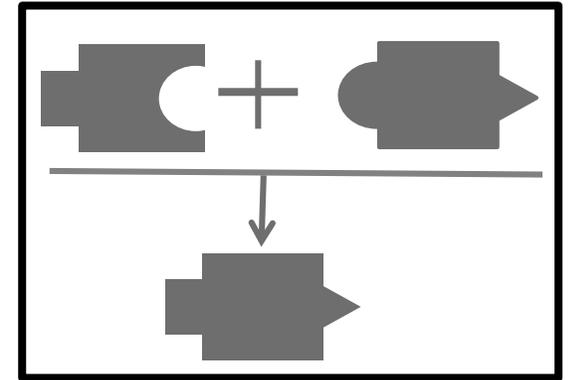
5) "God doesn't exist. After all, God is supposed to be all-knowing, all-powerful, and all-good so if God exists then there would be no suffering. Clearly, however, there is suffering."

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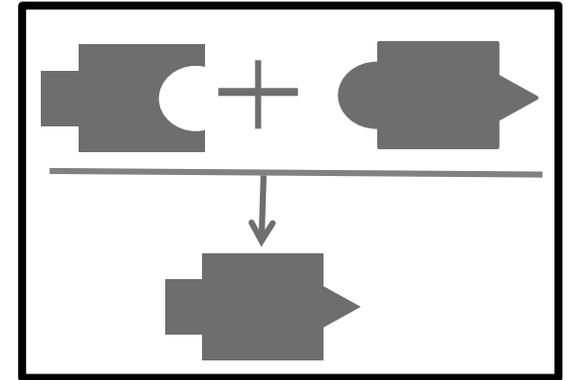
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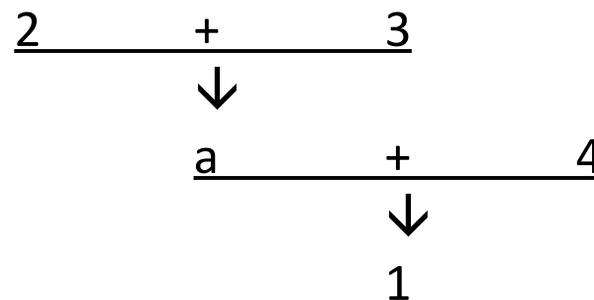


6) **FILL IN THE MISSING SUBCONCLUSION** "Miracles are violations of the laws of nature. We are never justified in believing that laws of nature are violated. And belief in miracles is the only justification for belief in God. Consequently, we aren't justified in believing in God."

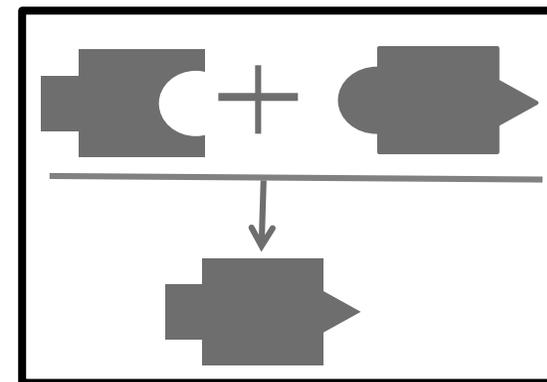


6) **FILL IN THE MISSING SUBCONCLUSION** "2 Miracles are violations of the laws of nature. 3 We are never justified in believing that laws of nature are violated. And 4 belief in miracles is the only justification for belief in God. Consequently, 1 we aren't justified in believing in God."

7) **FILL IN THE MISSING ASSUMPTION** "Belief in God will make us happier and healthier. Therefore, we should believe in God."

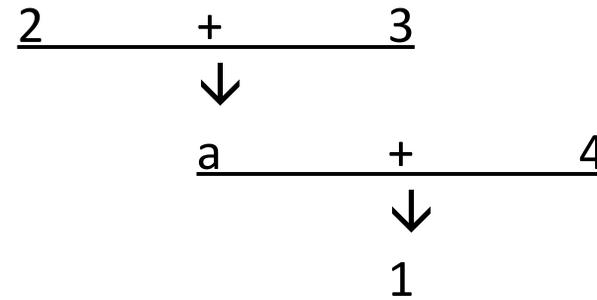


a = We are never justified in believe in miracles.

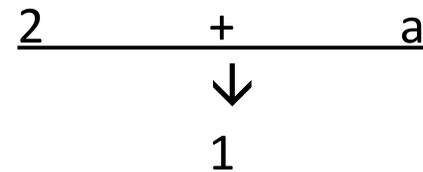


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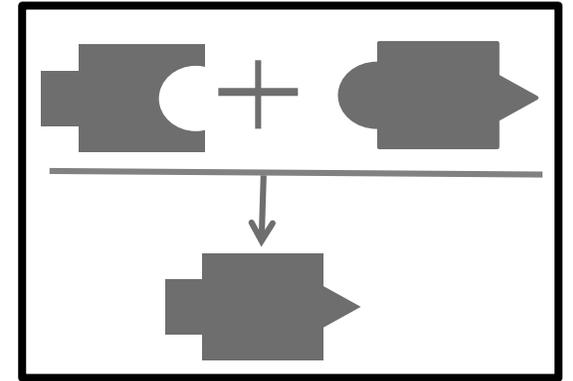


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a = If (makes us happier and healthier) then (we should).

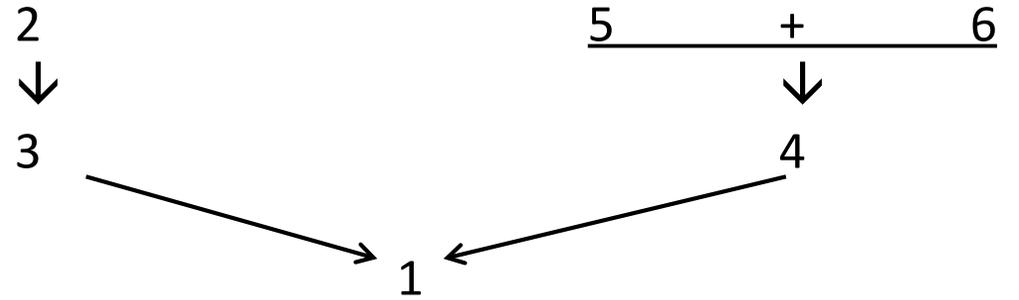
= We should hold beliefs that make us happier and healthier.



8) "Stealing is morally wrong. For one thing, we have laws on the books against stealing which means that our culture thinks that stealing is morally wrong. For another thing, stealing tends to produce unhappiness because it involves taking people's property without their permission and because people don't like to have their property taken away."

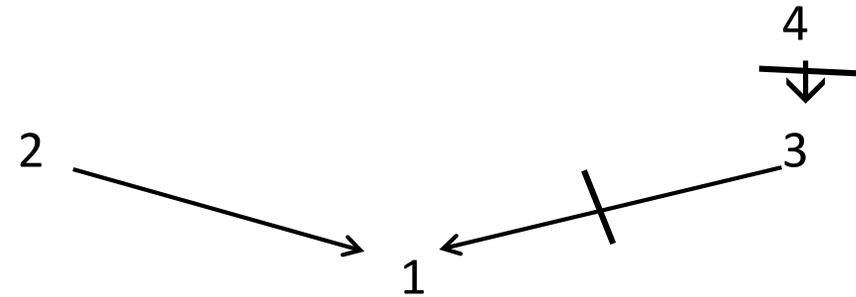
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✓ Each line of reasoning has its own theme.



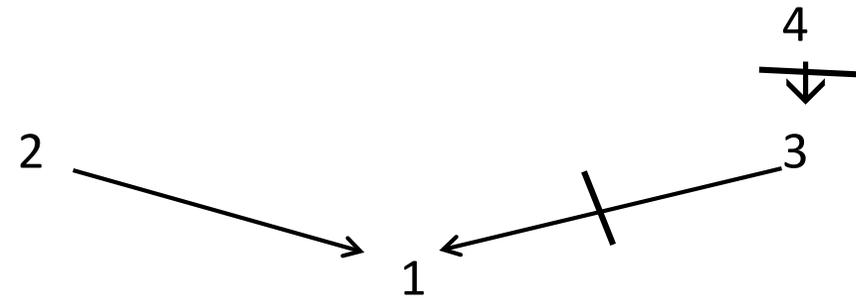
9) "Universities should offer philosophy because it helps students to think clearly. Of course, some people argue against philosophy on the grounds that it leads inevitably to atheism, but in fact, many philosophers are theists."

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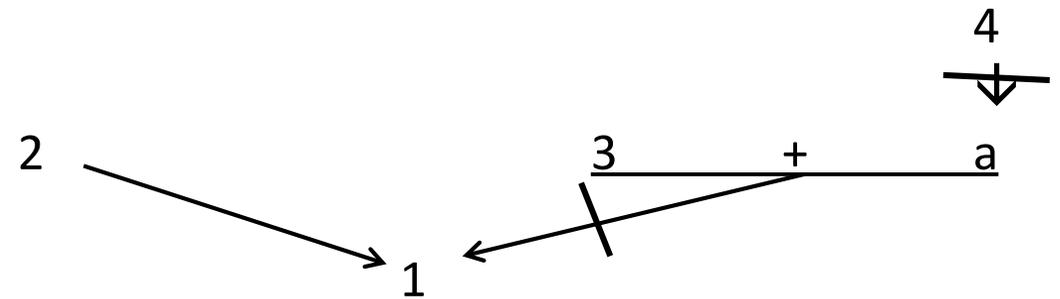


10) "Philosophy can be therapeutic because it helps people examine and clarify their worldviews. It might be objected, of course, that philosophy isn't therapeutic because the process of questioning deep-seated beliefs can be painful, but many things that help people in the long-term cause discomfort in the short-term."

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a = Nothing that's painful can be therapeutic.

## Tracking the Reasoning as You Encounter an Argument

1. What's the main conclusion?
2. What's being asserted here?
  - This may involve dividing sentences into parts.
  - This may involve summarizing multiple sentences into a single claim.
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    - Identifying distinct themes helps.
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## Extracting (i.e. Analyzing) Arguments

### Tracking the Reasoning

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### Practice

1) “Many people believe that nonhuman animals have rights, much like human animals do. What do you think? Let’s reflect on it a bit. If nonhuman animals don’t have souls then they don’t have intrinsic value, and if nonhuman animals don’t have intrinsic value then they don’t have rights. It follows from this that if nonhuman animals don’t have souls then they don’t have rights. Nonhuman animals don’t have souls, though, since they’re nothing but little machines. Therefore, nonhuman animals don’t have rights.” (Argument inspired by René Descartes)

2) “Most people use some kind of animal product, whether they wear fur, have a leather bag, eat meat and eggs, or simply put milk and honey on their cereal. The popularity of these practices notwithstanding, however, I think that we shouldn’t use animals for our own purposes without considering their welfare. After all, animals have mental states like anxiety and pleasure, which goes to show that they are experiencing subjects of a life. But experiencing subjects of a life have intrinsic value so animals have intrinsic value. And things that have intrinsic value shouldn’t be used for our own purposes without considering their welfare because things with intrinsic value are ends in themselves.” (Argument inspired by Tom Regan.)

3) “What should we think about lying? Well, for one thing, if everyone lied then communication would be impossible and if communication were impossible then lying itself would be impossible. Consequently (as odd as this might seem), if everyone lied then lying itself would be impossible. This goes to show that we can’t rationally accept the prospect of everybody lying. But something is ethical only if we can rationally accept the prospect of everybody doing it. Therefore, lying must not be ethical. For another thing, any action that’s against the will of God is wrong and lying is against the will of God because the Bible tells us not to lie.”

4) “What is the moral status of lying? Despite what many people would have us believe, lying isn’t morally wrong. For one thing, lying is saying something that isn’t true, and everybody says things that aren’t true now and then because everyone has false beliefs. This means that everybody lies, and nothing that everybody does can be morally wrong. For another thing, the truth can hurt which shows that lying can minimize pain. Obviously nothing that minimizes pain is morally wrong.

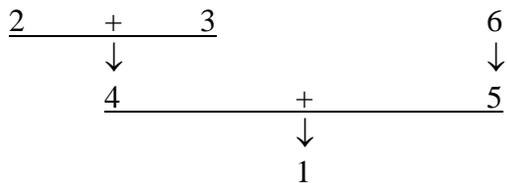
5) “What’s the future of higher education? Well, because all information is available on the web, web-based universities contain the most information. Obviously, universities with the most information provide the best education since the whole purpose of education is to assimilate facts. Students will choose to enroll in universities that offer them the best education, which goes to show that students will decide to enroll in web-based universities. Besides, only students who don’t hold jobs find it easy to take classes that meet during the work day, and most students do need to hold jobs, so it’s hard for most students to take classes that meet during the work day. Web-based universities don’t require students to take classes that meet during the work day because students can log-on to web-based classes whenever they want. That’s another reason to think that students will decide to enroll in web-based universities.”

6) “Although technology plays an increasingly important role in education, a bit of reflection shows that traditional face-to-face classes are in no danger of being replaced by classes taught on-line. For one thing, most employers want graduates who can make important decisions on their own so post-secondary education should ensure that students learn how to think well. Learning how to think well requires interaction with the professor. Only face-to-face classes can provide this interaction. For another thing, a good post-secondary education requires interaction among the students themselves because post-secondary education should teach students to get along with a wide variety of people. Obviously, face-to-face classes are the best way to get this interaction among students. And finally, because on-line courses don’t have a set schedule, an online class expects students to manage their own time. Clearly, classes that expect students to manage their own time are appropriate only for very responsible students, from which it follows that on-line classes are appropriate only for very responsible students.”

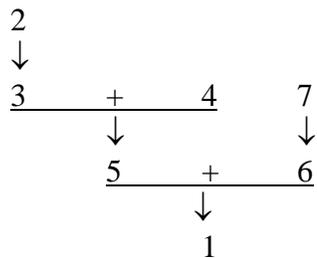


## Argument Maps Ahead

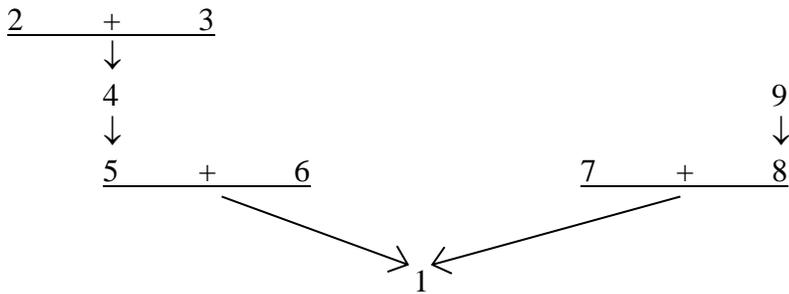
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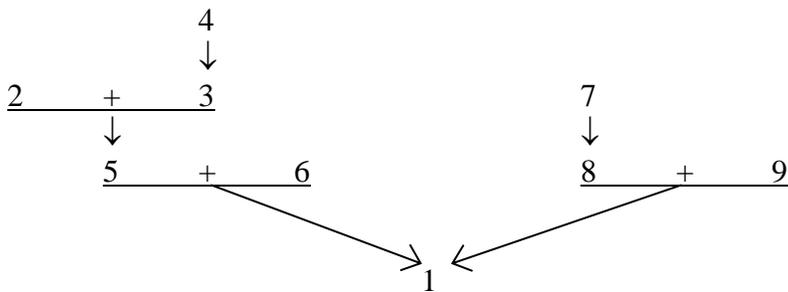
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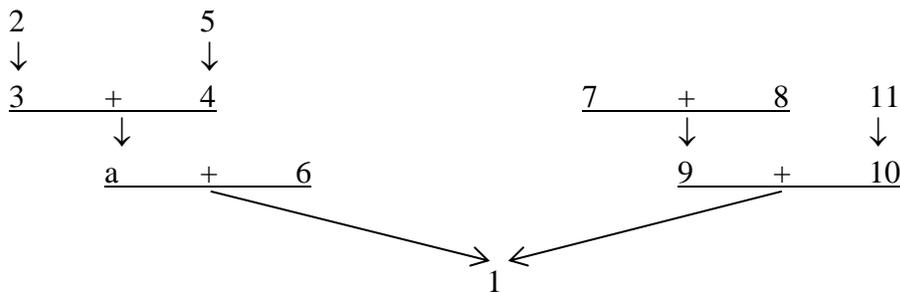
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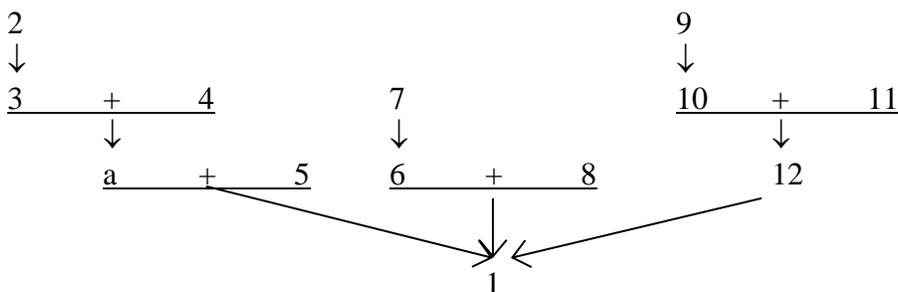
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5) “What’s the future of higher education? Well, because 2 all information is available on the web, 3 web-based universities contain the most information. Obviously, 4 universities with the most information provide the best education since 5 the whole purpose of education is to assimilate facts. 6 Students will choose to enroll in universities that offer them the best education, which goes to show that 1 students will decide to enroll in web-based universities. Besides, 7 only students who don’t hold jobs find it easy to take classes that meet during the work day, and 8 most students do need to hold jobs, so 9 it’s hard for most students to take classes that meet during the work day. 10 Web-based universities don’t require students to take classes that meet during the work day because 11 students can log-on to web-based classes whenever they want. That’s another reason to think that 1 students will decide to enroll in web-based universities.”



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**Participants of Critical Thinking Luncheon Meeting on 2/10/17**

#	First Name:	Last Name:	Dept.
1	Sarah Jane	Alger	Biology
3	Dave	Barbier	Sustainability
6	Tobias	Barske	World Lang. & Lit.
5	Valerie	Barske	History
7	Lindsay	Bernhagen	CITL
8	Agnes	Bolinska	Philosophy
9	Kym	Buchanan	Education
10	David	Chan	Philosophy
11	Dorothy	De Boer	Soc. & Social Work
12	Jonah	Elrod	Music
13	Cary	Elza	Communication
14	Todd	Huspeni	Academic Affairs
15	Kathe	Julin	Interior Architecture
2	Alice	Keefe	Philosophy
16	Mindy	King	Library
17	Vera	Klekovkina	World Lang. & Lit.
18	Trisha	Lamers	TLC
19	Cuiting	Li	HPHD
20	Nancy	LoPatin-Lummis	Gen Ed Program
21	Lynn	Ludwig	English
22	Shanny	Luft	Philosophy
23	Wade	Mahon	English
24	Heidi	Oberstadt	Communication
25	Ismaila	Odogba	Geog/Geol.
26	Jodi	Olmsted	Health Care Professions
27	David	Ozsvath	Geog/Geol.
28	Krishna	Roka	Soc. & Social Work
29	Laurie	Schmeling	Education
30	Michael	Sohn	Philosophy
31	Cade	Spaulding	Communication
32	Robin	Tanke	Chemistry
33	Pam	Terrell	Comm. Sciences & Disorders
34	Dona	Warren	Philosophy
35	Lee	Willis	History