

Part Two

The Practical Trivium



Chapter Eleven



The Early Knowledge Level: Ten Things to Do Before Age Ten

Train up a child in the way he should go: and when he is old,
he will not depart from it. — Proverbs 22:6

❧ INTRODUCTORY REMARKS ❧

THE GOAL OF TEACHING by the Trivium is to give students the tools with which to learn on their own – to liberate them from the drudgery of task-performance and to make them independent scholars. In previous chapters we have:

1. Explained how the Trivium can serve as both a method for learning any subject, and as a model of how the learning of a child develops (Chapter Four).
2. Argued the importance of the three formal subjects of the Trivium, and supplied some introduction to those three subjects (Chapters Five, Six, and Seven).
3. Discussed the importance of literature and history, laid out some principles for studying them, and given an example for the study of the literature of an ancient historical period.

Chapter Twelve



The Later Knowledge Level: Ten Things to Do With Children Ages Ten Through Twelve

Apply thine heart unto instruction, and thine ears
to the words of knowledge. — Proverbs 23:12

And by knowledge shall the chambers be filled with all precious
and pleasant riches. — Proverbs 24:4

❧ INTRODUCTORY REMARKS ❧

WHAT ARE OUR goals for a child at the Later Knowledge Level? During the entire Knowledge Level (birth through age twelve) the child is gathering Knowledge. In this later part (ages ten through twelve), academic

discipline becomes more structured and formal, and the study of formal language grammar and the study of mathematics is begun.

Consider this basic maxim of Homeschooling: “There is only so much time in the day.” Keep this maxim in mind as you consider which of the many subjects your child will study throughout his school age years. What is the wisest use of your time?

In our last Chapter, we discussed the ten things to do with children in the Early Knowledge Level, before age ten. “Formal” academics – a stack of textbooks and workbooks – are not necessarily the most important use of our time with children before age ten. But by age ten, most children are entering the Later Knowledge Level. This is approximately the age when children are ready for more *formal* academics. Around age ten, the light bulb goes on. The brain becomes physically able to make more complex connections, which, among other things, makes your child more able to handle abstract concepts, and helps your child with self-management and self-control. During the Later Knowledge Level, from ages ten through twelve, the parent will be the most intensely involved in his child’s education

The following is a list of ten things which we believe are most important for children in this Later Knowledge Level.

🎨 A SUGGESTED COURSE OF STUDY 🎨

1. *Family Worship*

Regular family worship is not just an add on. It is central. By age ten, your child is able to grow rapidly in the knowledge of the Scriptures, through his father’s instruction. The child will obtain an overall view of the Bible, and will continue memorizing Scripture. Your study of history may be designed to coincide with your study of the Old Testament. For more discussion, see Appendix One, Article Fifteen, Family Bible Study by the Trivium, or our booklet, *On Family Worship*.

2. *Literature and Reading Aloud*

Daily require your child to read something in the area of classical fiction, poetry, or short stories. Of course, many children are already doing plenty of reading on their own by this age. Old readers, such as McGuffey’s, are good sources for this type of literature. We bought the *McGuffey Readers* in 1978, and we used them until they wore out. I love these Readers, and I would recommend them to anyone. We have used them as beginning readers, as material for instruction in oral interpreta-

put it aside and try it again in a few months. Then again, if your child is breezing through it like a hot knife through soft butter, then you may want to jump to the end of the workbook, or move on to the next workbook. These workbooks are optional and are not absolutely necessary for preparation to the study of formal and informal logic, but they can be enjoyable and will help build up the logic powers of the mind to make the transition to the formal study of logic more gentle and easy. There is a Book 1 for a nine-year-old, but we regard this as too early and quite unnecessary. If you have time or resources for only one book in the series, then we recommend *Building Thinking Skills, Book 3 Verbal* for the twelve-year-old.

8. Arithmetic

BEGINNING ARITHMETIC (MATH) AT AGE TEN

A ten-year-old is perfectly capable of jumping right into a sixth grade math textbook, such as *Saxon 65*, with no previous experience with math workbooks or textbooks. Skipping Kindergarten through fifth grade in math will in no way hinder your child's success in math. You do not need to wear out your child's interest and your own patience attempting to make him understand what his brain is not yet wired to handle. Waiting until age ten, when your child is developmentally prepared to handle mathematical concepts readily, makes instruction in arithmetic very easy. What was painfully spread over five previous years, may here be compressed painlessly into as little time as a month.

We are *not* saying that you should keep your child away from numbers before age ten. Not at all. By age four, most children have discovered money, and you will not be able to hide numbers from them after that. Children encounter numbers all of the time. If you encourage learning, then they will be asking plenty of questions, and you will have plenty of opportunities for *informal* instruction in numbers and measurements. But we would not encourage *formal workbook* instruction before age ten unless the child shows a genuine interest and genuine competency to handle the work.

Before age ten, the child is largely acquiring the verbal skills of language, and your time is better spent developing his vocabulary – which is the primary index of intelligence. Remember the maxim: *There is only so much time in the day*. Your time may be much better spent reading aloud to your children than struggling with math concepts which your child simply is not developmentally prepared to handle.

OUR RESEARCH ON EARLY INFORMAL MATH

We have often been asked about our suggestion that math before age ten is best taught “informally.” This seems most uncustomary to many. We very much want to learn if there is any contrary research or historical evidence. Everything which we encounter on the question continues to confirm this common sense view on the matter. We continually receive positive and enthusiastic feedback from families which have followed these suggestions – though many at first were somewhat apprehensive. Now, if a family is generally lax or unschooling in its approach, they cannot blame their math troubles on our recommendations. We recommend no lax learning. Lax learning lacks learning.

WHAT WE RECOMMEND FOR MATH (AND GRAMMAR TOO)

What we and others recommend regarding math is basically what was practiced with outstanding success until the twentieth century, when formal math before age ten was largely introduced into the world. Cultural math failure coincides with the innovation of early formal “workbook” math. We argue that it’s the method. We believe in math before age ten. But we believe the evidence is against *workbook* math before age ten. The developmental evidence appears very supportive of that view. The same is true with grammar – not language, but formal grammar. It is best to learn to speak and to read and to write a language before age ten. But grammar – identifying gerunds and participles – is best left until approximately age ten.

THE FILE DRAWER ANALOGY

Math and grammar can be “learned” – sometimes “learned” well – before age ten, but it’s not the kind of learning which we want. We may compare this to putting information in the wrong file cabinet – we have trouble later finding the information and using it. By age ten, the information is literally stored in a different part of the brain than before approximately age ten. Learning math in an abstract workbook fashion before age ten literally causes the brain to be structured differently. If the child depends upon his early math learning drawer, and does not develop a new file draw for later math learning, then he runs into a brick wall when he encounters algebra. (We like to mix our metaphors.) Now, if he learns abstract workbook math before age ten, then he will either develop a second math memory after age ten (and, hopefully, not have a cross-indexing problem), or else he will begin to fail in upper math. But if he learns math in a concrete – not abstract – way before age

ten, and he begins to learn abstract workbook math by age ten, then the brain will develop properly, the right connections will be made, and – assuming normal abilities and developments elsewhere – he will advance in math at a regular pace without unusual difficulties. The same is true with grammar.

THE COMPUTER ANALOGY

Or, to put it in computer terms, some word processors can handle some simple calculations. We can type in the data, and it will work with numbers on a simple level. But if we want to do complex calculations, then we must load a much more complex program on the hard drive. Until about age ten, children only have word processors. About age ten, the more complex spread sheet program begins to be loaded up on the hard drive. If we enter all of our math information in the word processor, then it is likely that when the child switches to the spread sheet program, the data will not be compatible. Formatting errors will abound. We'll need to re-enter the data. Why not do something more profitable until the spread sheet program is up and running?

TIME BETTER SPENT

We are satisfied that the time spent studying math – which the young child is not yet developmentally equipped for – could better be spent developing verbal skills – which the child is a sponge for at these early ages. Deal with numbers in a concrete and verbal way until age ten. Use actual objects when you can, and when you can't, then use words and names for actual objects. Our culture is so full of numbers and measurements, that we let them pass without notice. Teach the names for numerical values with dominoes. Teach counting with cards or Rummikub. Teach addition with checkers or chess. Teach base ten and place value with money or Cuisenaire rods, or other manipulative math programs. Teach measuring systems with tape measures, measuring cups, weight scales, odometers. Teach fractions with pies and cakes and cooking. Teach area by garden plotting and room arranging. One mom who had struggled with waiting in math wrote us that her son wrote down on a Sunday school form that math was his favorite subject. Since they didn't do math, she was surprised and puzzled. When she asked her son why he wrote down math, he said, "What do you mean, Mom? We talk about numbers all the time." When she sat down with her son and looked through a math program, she discovered that he already knew it all. This may be a little more intuitive and less structured than we have in mind, but it demonstrates well how these things are taught as part of

life.

Much more could be said on this subject. Suffice it to say that formal instruction in math before age ten is historically a very recent phenomena. So are all of the problems which have developed in math instruction. This has encouraged the invention of the more “informal” manipulative curricula – exactly what we advocate. (See Appendix One, Article Eleven, History and Research on the Teaching of Math.)

EIGHTEENTH CENTURY ATTITUDE TOWARDS MATH

Here is an excerpt taken from *Drums*, an historical novel by James Boyd (published in 1925). This excerpt will show you the general feeling towards mathematics among classicists of the colonial period. The time period here is about five years before the War for Independence. The place, North Carolina. Thirteen-year-old Johnny has been sent from his backwoods home to the nearest city in order to be tutored by Dr. Clapton, a pastor of the Church of England. He had been homeschooled up to that point. In this passage, Dr. Clapton is determining where Johnny stands academically:

“Now,” he said, “fetch down your school books and we shall see.” What Dr. Clapton saw by the end of the morning was this: that Johnny wrote a fair hand and spelled within reason, that he read the easier passages in Caesar’s Commentaries passably but with no pretensions to elegance; and that his efforts to write Latin were uniformly deplorable. In the realm of science he could add, subtract, divide and multiply infallibly if given ample time, but of fractions the less said the better. “You must learn to cipher, Johnny. It is unfortunate that gentlemen’s sons should employ their time in the commercial branches, and I should never subscribe to a young man’s going a step beyond fractions and decimals, unless, of course, he were to enter his Majesty’s navy, and even there I consider that the mathematics should be left as far as possible to the lower ranks. But with clerks and stewards what they are nowadays, a gentleman must know fractions if he would protect his affairs.”

“Yes, seh. Dadder said I must learn fractions.”

“I have no doubt. A knowledge of ciphering is commonly demanded by the parents of this Province.” His eye wandered. “I have concluded,” he murmured, “that ciphering is one of the unavoidable disadvantages of a new country. Yes. . . . as to Latin exercises; that is more serious. When I was a Colleger at Eton the meanest scholar your age could do his fifty lines a day with never a false quantity.”

This is not quoted to encourage less study of mathematics, but only to demonstrate the provincialism of those who advocate very early formal instruction in arithmetic and mathematics.

MATH BEFORE AGE TEN

Before age ten, our children studied math informally. We taught them to count and write their numbers. By the time they were ten, they had learned how to add and subtract, and had memorized many of the math facts without any formal instruction.

Your average Homeschooling family lifestyle comes complete with a full array of informal arithmetic exercises. Here are just a few examples of how children learn math informally:

1. Setting the table (How many people to serve?) and cooking (How many times should I increase the recipe?) and chores (How many scoops to fill the dog's dish?).
2. Helping Dad around the house. This often involves measurement systems and fractions: inches and feet, ounces and pounds.
3. Helping Mom around the house. Teach fractions and measurement systems with cooking: teaspoons and tablespoons, pints and quarts. Teach area by garden plotting.
4. Playing games such as Rummikub, chess, checkers, card games, dominoes, jacks, pick-up-sticks, and hopscotch. In all of these games, children must count and keep score.
5. Playing store and restaurant. (Base ten, place value, money systems.)
6. Building calculators and cash registers out of cardboard or matting board scraps.
7. Collecting coins.
8. Playing with Cuisenaire rods. (Sizes and fractions.)
9. Observations while driving in a car. (Mileage signs, advertisements.)
10. Baseball statistics.

MATH BY AGE TEN

By age ten, I made for the child two arithmetic grids – one for addition and subtraction, and one for multiplication and division. Each grid consisted of a square piece of paper, with the digits 1 through 9 running in a column along the left side of the page (with 1 at the top and 9 at the bottom), and again in a row along the top of the page (with 1 at the left and 9 at the right).

10. Art and Music

If you want your children to be familiar with classical art and music, check such things out from the library, buy some prints or recordings, take them to the art museum or the orchestra. At this age, you will need to critically evaluate and select things for them.

You may choose to pursue a formal art curriculum, or to begin formal instruction in a musical instrument.

I think the best way to develop art creativity in your child is to continue to provide your children with the tools, the space, and the time for art projects. Ease of availability of art materials and encouragement from the parent are what the Knowledge Level child needs in order to pursue art. A table and chair in the corner of the living room, along with a nearby shelf lined with good quality art and craft supplies, will draw most any child. I bought my children matting board scraps to use in their art projects. These pieces of hard colored cardboard can be used to build castles, cash registers, computers, doll houses, boxes, and any number of objects. Matting board scraps can be purchased from most art stores.

A Few More Thoughts

CLASSICAL COWBOYS

Question: Thank you for the reminder that we do not need to compete, not even with other homeschoolers. Periodically, we have a day (like today!) where I am not organized, and the boys capitalize on my lack of input. Right now, all three (nine, seven, five) are in the backyard, dressed as cowboys, putting on packs, making camp, and plowing ground for a small garden. On these days, my spirit tells me that this is an excellent use of time, although my mind nags at me to call them inside to work. We seek to find a balance. Today, my nine-year-old began school work, and both boys spent about an hour to an hour and a half covering math, copywork, spelling, reading, grammar, and Spanish. We will read aloud in a little while, and my nine-year-old will read on his own, but meanwhile they can ride their horses (well, they are actually bikes) around the backyard. A nine-year-old in jeans, chaps, bandana, cowboy hat, boots, and pack, on a horse-bike is more pleasing to me than a beautifully written report. In my way of thinking, we will have time for those reports later on.

Answer: It seems like only yesterday that Hans (now twenty-one) was dressed in his cowboy outfit and sitting on his horse (the living room

couch armrest). I have a picture of it. He would sit there by the hour riding his horse. I wish I could go back fifteen years and watch him again. Savor the moment. Enjoy their youth. It doesn't last long.

WHAT DO I DO WITH THIS BOY

Question: I have a boy who manifests the following behaviors:

1. Hates to hold a pencil and has terrible handwriting.
2. Is not motivated.
3. Does the minimum required – seems lazy.
4. Wanders around with seemingly nothing to do.
5. Must be continually reminded.
6. Does not read much.
7. Does not like academics.
8. No project appeals to him.
9. Has a narrow field of interests.
10. Has a short attention span.
11. Often seems “hyper.”
12. Always must be doing something with his hands or his feet.
13. Does not want to do any of the things which I suggest.
14. If enrolled in a classroom school, then he might be labeled.

What do I do with this boy? I feel very frustrated.

Answer: Here are a few suggestions:

1. Do not allow television, movies, computer games, music which contains any kind of a syncopated beat, sugar and caffeine. Allow him only supervised contact with peers.
2. Make him repeat back to you what you have told him to do.
3. Work with him until you are satisfied with his obedience. This is of the utmost importance.
4. Make a list of the things he needs to accomplish each day, and have him check them off as he does them, and hold him accountable daily.
5. Wait until age eight or nine before teaching him to read if necessary. Do not begin formal workbook academics until age eleven. Read to him at least two hours each day. If he hates to write, then allow him to dictate to you his letters and journal entries, or use a tape recorder.
6. Exploit the child's one or two chief interests. Use it as an avenue to other things. (e.g. Link guns to the Second Amendment to the Constitution to principles of sound government, to history of warfare.) Start him in his own business involving his interests. For example, if the child's interest is fenc-

some special interest which he has (rock collecting, cooking, growing flowers). A fifteen-year-old's project would be more complex.

During the first year your child does a Science Project, this will probably be such new and uncharted territory to him that you will need to walk him through it. That will be the year in which you, the parent, will become an expert in how to do a Science Project. (Remember, Home-schooling is for parents.) By age fifteen, your child will be much more independent, and you will need to intrude yourself into his project in order to find out what is going on. So enjoy it while you can. Actually, we love helping with projects. It is one of our favorite parts of Home-schooling. We enjoy doing research at the big university libraries.

Nathaniel, our oldest, was always ready to study science. When he was thirteen, we read in the newspaper about a Science Fair to be held in two weeks at the local mall. It was open to all students in the area, even homeschooled students. We made an attempt at some projects to enter in the fair. Since Nathaniel was interested in model rockets, he devised an experiment to measure how high a rocket would fly with different weights in its payload. He built a tool which used angles and geometry to measure how high the rocket flew. His project was very simple, and his write-up and display were very simple. He won first place over all the other government school eighth graders – there must have been about twenty other children. Johannah's project was something about making bread using different ingredients. She won third place. Their projects were so simple that we were quite surprised they did so well. I think it was the simplicity, yet the thoroughness, which impressed the judges. So every year, for the next five years, Nathaniel and others entered a Science Fair. When Nathaniel was fourteen, he grew plants under hyperbaric (high air pressure) conditions, and at fifteen he made wine under hyperbaric conditions. At sixteen he grew bean plants under Extra-Low Frequency electromagnetic waves, and at age seventeen he entered the NASA Space Science Mars project. It was so much fun! We loved going to the different libraries in order to research each project. It was challenging to conceive and devise each project. Some Science Fairs will allow students to display projects which are more like demonstrations (how a volcano works) or collections (the different kinds of insects found in my yard) in place of a real science experiment with hypothesis, procedure, data, and conclusion. Demonstrations and collections are good beginning projects for a student in the Knowledge Level (ages eight through twelve), while students in the Understanding or Wisdom Levels should be doing real science experiments.

CREATION SCIENCE

You do not want to neglect the wealth of creation science resources which are available – science videos, books, and tapes. Our Resource List has many of these resources.

10. Art and Music

Families vary in their priorities here. If neither parent has any special abilities in music or art, then you could pursue formal music or art lessons under a professional tutor, or you could attempt one of the “learn at home” courses. If your child shows no particular talent or interest here, then you should nevertheless develop his appreciation for matters of music and art. This will be difficult if the child has no particular interest, and even more difficult if Mom and Dad are not particularly talented or interested either. Expose the family to good music and good art. When our children were young, we bought some inexpensive instruments – an autoharp, a dulcimer, some recorders, and a guitar. We have spent many hours playing instruments together. You will find materials for art and music appreciation in our Resource List.

 FATHER'S ROLE 

We have covered the academics for the Understanding Level, but there is more to say. The classical homeschool is not just Latin and logic. It is a way of life. We have made our share of mistakes in our Homeschooling. Here is one of them:

Fathers should be more than figuratively the head of your school. Children in the Understanding Level need their father. Of course, children of all ages need their father's attention, but the early teens even more so. We have not always been aware of this in our own family. Oh, to go back and do things right! But perhaps others can learn from our mistakes. If junior is supposed to be writing out his spelling words, but Daddy wants him to help him with the lawn mower, then by all means let the lawn mower win. Daddy only has so much time with the children, so make the best use of it.

We suggest Fathers assume the task of teaching the children Greek. It will not only help the children, but it will also help him – in his study of God's Word, and in numerous other ways. Logic is also best taught by the Father. Here is an excerpt from an essay our oldest son Nathaniel recently wrote: “When I was about thirteen, my parents announced that we were going to study logic. What thoughts flitted through my anti-

opposite direction. We want to discuss some of the choices which homeschooled adults will need to make. As we move out of the home and into the world, we don't want to deny the vision which has guided us all the way through school.

 KNOWLEDGE LEVEL: 
 HOW WE CAME TO WHERE WE ARE

When our own children were young, we assumed that when they reached the age of eighteen they would leave home and go to college, and that would be the end of our responsibilities. In our mind, success in life equaled going to a good college (with a generous scholarship, of course). So, in order to go to a good college, most of our goals were academically oriented, not spiritually oriented.

We wrote away for dozens of college catalogs and asked about requirements for homeschooled students. Nathaniel, our oldest, took the ACT and SAT tests in 1992. The day came in May of 1993 when we received back some of those scores, and we thought "why are we in such a hurry to get rid of this boy?" Yes, with these scores, he could probably go to any college he wanted. Yes, we had accomplished the academic goals we had set for ourselves. But where are we headed? Nathaniel didn't want to go to college. So why were we pushing him?

God used personality conflict in our family to straighten out our thinking. As our children grew older we began to see the need to focus more on character than on academics. We also came to understand the different roles God has for boys and girls. We had never realized that the most important goal was to prepare our children for marriage.

In this Chapter, we are describing our own experiences and opinions. This is not a "you must do like we do" command, but simply suggestions and ideas from our family to yours. You may disagree with us, and that's fine. But let us open the dialogue about these issues.

 UNDERSTANDING LEVEL: 
 PRINCIPLES FOR MAKING DECISIONS
 AND SETTING GOALS

Wisdom is *not* bound up in the heart of a child. Parents need to teach their children how to make decisions about their life, because children will not naturally learn how to set wise goals and how to be persistent in those goals. Here are some principles for making decisions and setting goals:

1. *Instill in your children the desire to listen to advice from their elders.* Parents can show their children how to listen to other's advice by exemplifying good listening habits themselves. A father or mother who does not show respect for the counsel of others, especially elders, will communicate that attitude to their children. God will probably show children what choices to make in life through the advice of others. A spirit of listening can go a long way towards learning wisdom.

2. *Make wisdom-based decisions about your future.* Easy-in-easy-out decisions result in an unstable life – one which hops from place to place, from job to job. This comes from making decisions based upon hunches. Even in moral decisions, which must be based upon moral principles regardless of the circumstances, there is often more than one right way to respond to a situation. Don't make a decision to do something because you *hope* it will turn out well. Gather the facts, understand the theory, then put into practice what you have good reason to believe will work. Decisions based purely upon hopes or desires for the future, or upon feelings or hunches, are unreliable.

3. *Accumulate multigenerational wisdom.* Different families have different standards for making decisions. This affects the stability of the family life – how long a family remains focused upon a single vision without shifting to a new direction. The goal is for a family to accumulate wisdom for making decisions, and to pass that wisdom on to each succeeding generation. Even if a family never becomes wealthy in a material way, the community will recognize that family as a source of wisdom and multigenerational vision.

4. *Don't work without clear goals.* If you don't know what to do, then your goal is to move in the direction of finding out what to do. If you don't know where you want to go, then at least spend time learning to read a map. When your inspiration comes, you'll be better prepared to act. If you don't have the information you need for making a decision, then at least you know one thing: you need to find that information. There's always something you can do.

5. *Learn to sort the necessities from the niceties.* Can you tell the difference between a good idea and the idea you should pursue? If you find yourself dropping what you are doing every time you meet another good idea on the street, then you will never find stability. Learn to sort the *must-dos* and the *should-dos* from the *might-be-a-nice-idea-to-dos*. There are many good ideas out there – be a missionary to China, open an orphanage, run for congress – but what is the thing which God put you on this earth to do?