

“Trail of the Vampires”

A Science Olympiad Road Scholar Exam

Tarah the vampire buster was about to complete her freshman year at Central High. It had been an eventful year, and she was looking forward to a relaxing summer. It was not to be, however, as she found Jennifer waiting for her one deceptively peaceful night outside a local restaurant. Jennifer informed her that she had overheard that the vampires intended to establish their world headquarters somewhere in New Hampshire near the middle of July. Once established, it would attract vampires from every major country on the globe. The next morning Tarah rushed to Ashad, the watcher, to share the news. He was obviously shaken and stated that they must use every means possible to prevent this from happening. He promised to somehow arrange for their travel expenses to New Hampshire.

On July 12th, Tarah and her teammates, Julie, Jerome and Thomas, boarded a plane and flew to the city of Manchester, NH. At the airport they purchased several New Hampshire maps and picked up their rental vehicle, a SUV. Jerome, determined to be the driver, hastily jumped behind the wheel before anyone else could volunteer. Upon departing the 1 [HM Inset] Airport, they proceeded north on NH-28, also known as 2 [HM Inset], toward Concord. Shortly after crossing the Merrimack River, they veered to the left continuing north on I-293 through the city of Manchester. They knew they would not be traveling very far on I-293 because the first digit of that route number, a 2, indicated to them that I-293 is a 3 [HM].

Julie asked Thomas, their designated navigator, how far it was to Concord. Thomas replied that it was 4 [HM] miles and wondered aloud why, at the interchange where I-293 merges with I-93, also known as 5 [HM] Turnpike, the color of the road on the map changed from blue to green. Jerome said that green on this map designates a 6 [HM].

As the team entered Concord, they took out the Concord Quad. Exiting I-93 at Interchange 13 they took [7 HM] north and turned left onto Pleasant Street. After several minutes, they realized they should not have turned off Main Street. They stopped briefly at Crowley Road to get their bearings.

Julie said somberly, “We have driven miles out of our way.”

Jerome, glancing at the odometer, replied, “We have traveled only 8 [C] miles on Pleasant Street. It won’t take us very long to get back to Main Street.”

Thomas mentioned that the lake to the southwest was named 9 [C] and that its surface elevation was 10 [C] feet above sea level. Tarah, spotting several islands in the lake, noted that those with the highest elevations must be least 11 [C] feet, but less than 12 [C] feet above sea level. Julie, peering at the map, asked Thomas why some of the brown lines on the quad appeared wider than others. Thomas responded that the wider lines were called 13 [C] contours.

Jerome reminded his friends that, although maps were fascinating, there was much work to accomplish and suggested they head back immediately. Turning the SUV around, he commented that Pleasant Street was a very well surfaced road. Tarah, peering at the map, replied that it should be since it is classified as a 14 [C] highway.

Suddenly Tarah shuddered.

“What’s wrong?” asked Julie.

Tarah replied in a worrisome tone, “We must be near a cemetery.”

Sure enough, on the right side of the road were two cemeteries. These were 15 [C] and 16 [C].

“I certainly wouldn’t want to be around here at night,” stammered Julie in a shuttering voice.

Tarah, deep in thought, responded, “But it could be just the place to find the vampires.”

On their return trip to Concord, they passed a group of monks walking toward St. Paul’s School.

“I wonder where those monks live,” quipped Thomas.

Just then they passed 17 [C] on their right.

Half a mile further down the road, Thomas spotted a radio tower and muttered, “I wish we knew the call letters of that station. We might be fortunate enough to tune in on a few ‘Three Dog Night’ selections.”

Jerome commented that they had just passed a sign identifying the station’s call letters as 18 [C].

Back on Main Street once again, Jerome turned the SUV to the left. Several blocks later, our heroes came upon the State House, or State Capitol Building. Adjacent to the State House was a 19 [C] control mark indicating an elevation of 288 feet.

A sign, bearing an arrow pointing toward a library, prompted Tarah to ask her friends whether visiting the library might prove valuable in discovering clues to the whereabouts of the vampires. Everyone agreed that it was worth a try.

Entering the lobby, Julie spotted a newspaper rack. A bold headline read “Break-in at Red Cross Blood Bank Reason for Concern”. Upon reading the article they discovered

the break-in had occurred in a small village named Meaderboro Corner. Upon hearing this news, Jerome proclaimed that they must head for Meaderboro Corner at daybreak.

They met early the next morning to determine the fastest possible route to Meaderboro. A search of the highway map revealed no village bearing that name. Julie, quick to offer an explanation commented that, due to the small scale of the highway map coupled with the small size of the village, the cartographers may have chosen not to include it to avoid cluttering the map. Turning to the Baxter Lake Quad they immediately located Meaderboro Corner in sector 20 [BL]. The principle road leading to Meaderboro Corner was State Route 202 A, classified as a[n] 21 [BL] road.

“Our hotel is directly across from the State House. All we have to do is identify the shortest route leading to SR 202A on the highway map, and we’ll be on our way,” Julie commented. “Look, we can take I-393 East to U.S. routes 22[HM] and 23[HM] to Northwood. A left-hand turn will put us right on SR 202A. Simple enough, I’d say.”

Returning to the Concord Quad, Julie asked, “What is this black cross on the road?”

The “cross” she was referring to was located at an azimuth of 303 degrees and a distance of 0.18 miles from the State House. Thomas glanced at the cross and said it was a 24 [C].

“Before we leave Concord, I think we should visit the State House and let the governor know what is happening,” said Jerome.

They all agreed. After checking out of their hotel, they walked across the street to the State House. Once inside, Tarah requested to see the governor. As this was an election year, he willingly granted her five minutes of his time. Although he showed grave concern, the governor informed them that he needed more information before he could call up the National Guard.

Back in the SUV, they turned north onto Main Street. Tarah asked how far it was to U.S. 202. Jerome replied, “It’s 25 [C] miles.” After making a right onto US 202, Thomas mentioned that the Merrimack River had changed course many times over the years. He cited as evidence the many 26 [C] [Answer choices: A) curved, B) oxbow, C) horseshoe] lakes which had been cut off from the main river. They soon crossed the Merrimack River by 27 [C]. Answer choices: A) tunnel, B) bridge, or C) ferry.

Julie, steadfastly following their progress on the Concord Quad, stated as they reached the eastern edge of the quad, that they were now at a longitude of 28 [C] and that they were about to cross into the 29 [C] quadrangle.

Jerome, driving a tad too fast, asked on which quad Meaderboro Corner was located. When Thomas reported that Meaderboro Corner was on the Baxter Lake Quad, Jerome asked in which sector of the quad this small town was to be found.

Thomas replied that Meaderboro Corner was located in the 30 [BL] sector.

Tarah asked, “Where is Baxter Lake on the highway map?”

Julie responded, “I can’t seem to locate Baxter Lake on the highway map. It must be too small to have been included.”

Tarah then asked, “Do we know the name of the county in which Baxter Lake is located?”

“As a matter of fact, I do,” replied Julie. Comparing the area of the Concord Quad with the same area on the highway map, I can tell that Baxter Lake is in 31 [BL] County.”

“I found 202A on the Baxter Lake Quad,” said Thomas. “It enters the map in sector 7 at a small town called 32 [BL].”

“We’re running low on fuel!” exclaimed Jerome. “What’s the next hamlet past Center Strafford, and how far must we travel to get there?”

Thomas replied, “It’s a little place called Berry’s Corner. Give me a sec to find the distance. Okay, it’s about 33 [BL] miles from the intersection of NH 126 and NH 202A in Center Strafford to the main intersection in Berry’s Corner.”

Since they found no gas station in Berry’s Corner, our heroes pressed on to Meaderboro Corner. Here they found not only gasoline, but a fast food restaurant as well. Tarah asked the manager where the nearest Red Cross Blood Bank was located. Being told that it was right next door, the group immediately departed. Upon entering the front door of the Blood Bank, they discovered a very distressed, frightened manager.

“I don’t have any more blood; if that’s what you’re after!” the manager shouted.

“You don’t understand. We’re here to find those responsible for taking it,” Jerome interrupted. “Can you give us any information, any information at all, that might help us find them?”

The manager scrutinized the group carefully for a moment and decided they posed no threat. He then told them all he could remember.

“Was anything else in the ice chest?” asked Jerome.

“As a matter of fact, I had a string of garlic in the chest,” replied the manager.

Jerome, Tarah, Julie and Thomas were now certain that they were on the right track since they knew vampires would never go near garlic.

The manager continued, “One of those scoundrels dropped this receipt from the campground at Baxter Lake. Do you think it’s important?”

“You bet it is!” exclaimed Tarah.

“Do you think they drove or used a boat on Rickers Brook to get to the campground?” asked Julie.

“I’m certain they drove because they probably had too many supplies to load onto a boat,” replied Thomas. He also noted that Rickers Brook flows in a 34 [BL] direction.”

Arriving at the campground, they found very few picnickers or campers about. There was, however, a man fishing on the lake. When he spotted Tarah waving frantically, he rowed to shore.

Tarah asked the fisherman whether he had noticed any unusual occurrences lately.

The fisherman replied, “Yesterday, when I awoke, there was a strangely decorated van parked near the shoreline. As I walked past the van I heard some really weird sounds coming from inside, but I didn’t see anyone moving about until shortly after dusk. When they finally did climb out, I noticed how strange the three men and three women appeared. I was very careful to avoid drawing attention to myself, but I did sneak around the bushes to observe from a distance. Later a large helicopter arrived. I saw the group unload some very unusual items from the van and put them onto the helicopter. I could have sworn they were coffins. Finally, all six of those weirdos climbed aboard the helicopter and took off in a northerly direction.”

Tarah asked, “Is the van still here?”

“Right over there, Ma’am,” answered the fisherman.

Thanking the fisherman for his assistance, the group sauntered toward the van. In the back of the van they found some dirt and an empty box marked Blood Type A.”

“Well, at least we haven’t completely lost them,” Jerome said with an obvious sigh of relief.

“Look what I’ve found!” exclaimed Julie. “A marked up topo map.”

“They must have forgotten to take it,” said Thomas.

“Which quad is it?”

“The Mount Pisgah Quad, and Mount Pisgah is circled ... in blood.”

“Is that the quad directly north of the Baxter Quad?” asked Tarah.

“No,” replied Thomas. “The quad north of Baxter Lake is the 35 [BL] quad.”

“What is the scale of the Mount Pisgah Quad?” asked Julie.

Thomas said that the scale had to be 36 [MP] because it was a 37 [MP] minute series map.

They decided there was little time to waste. Consulting their map, they chose to travel to Rochester and head north on NH-16.

Once in Rochester they discovered that NH-16 was also designated as US- 38 [HM]. They stayed on NH-16 heading north. Near the city of Berlin [F-90], Julie spotted a large hill to the east named 39 [HM] that was 40 [HM] feet higher than Berlin in elevation.

They stayed on NH-16 until they arrived at Dead Diamond River. Stopping briefly at the river, the group decided that even their SUV couldn't make it to the summit of the mountain. They again studied the Mount Pisgah Quad, searching for any possible solution to their dilemma.

Jerome asked, “What is the area of the square that surrounds Mount Pisgah?” He was referring to the black lines on the quad which divide it into squares.

Thomas, after determining the length and width of the square and multiplying them together, said, “The area is exactly 41 [MP] square feet.”

“We might be in luck,” said Tarah as she spied a powerboat slowly moving upriver. She shouted at the man on the boat who then maneuvered his craft to within a few feet of the fearless foursome.

“Hi, there!” the boatman greeted them. “My name is Captain Wolster.”

“Captain, is it possible for you and your boat to get us closer to the foot of Mount Pisgah?” asked Tarah very politely.

“This boat can go anywhere on the river. Nothin' in the world can stop her.”

After quickly explaining the desperation of their situation, Captain Wolster agreed to help. They loaded their gear onto the boat and were soon on their way. They followed Dead Diamond River until they came upon Little Dead Diamond River. They soon parted the river, planning to travel by foot to the base of Mount Pisgah.

Tarah announced, "I'm hiking to the summit. It's a bright and sunny day. If the vampires ARE HERE, they'll be tucked safely away in their coffins."

"What is the elevation at the summit of Mount Pisgah?" asked Julie.

"According to the quad, it's 42 [MP]," replied Thomas.

Upon her return, Tarah had an alarming tale to share. The vampires were nowhere to be seen. However, she had discovered a newly constructed altar near the summit of the mountain. She was almost certain they planned upon returning that very evening to perform one of their unholy rituals.

Jerome, taking out his cell phone, said, "Thomas, calculate the coordinates at the NE corner of sector 1. That should be close enough to the summit to guide the helicopter pilot to the summit." I'm calling the governor right now to request an air strike."

Within moments, Thomas had determined those coordinates as being 43 [MP].

Jerome relayed the coordinates to the governor and said they would be anxiously awaiting his response. When the call came, it was anything but good news for the now weary group. There would be no air strike as a severe storm was rapidly approaching.

"What do we do now!" exclaimed Julie.

"Whatever we do, we better do it quickly, responded Jerome. "See that squall line in the direction of Chase Mountain, sector 9? That mountain is just 43 [MP] miles away [use the bench mark near the summit of Chase Mountain for your measurement] at a bearing of 44 [MP] as measured from the summit of Mount Pisgah,"

Tarah, once again thinking aloud, said, "Those vampires will perform their wicked ritual in spite of lightning, hail, sleet, thunder or whatever else nature happens to bestow. Mount Pisgah is the highest point for miles around. If we could plant a lightning rod in the altar, maybe the storm would take care of the problem for us."

"But, we're way out in the boonies! Where will we ever find a lightning rod in such a short period of time?"

“Guess what, Gang!” interrupted Captain Wolster. “My boat has aluminum hand-rails that are about 20 feet in length. One of those might do the trick. I’ll scurry on down to my boat and fetch one.”

Returning with one of the handrails, Captain Wolster pointed toward the summit and shouted, “Onward and upward!”

They moved as quickly as the terrain and their tired bodies would permit. At the summit, with Tarah giving directions, they concealed the handrail in the altar. After completing their task, they chose a well-concealed spot to wait, observe and hope.

Soon total darkness was upon them. Six hideous figures, cloaked in black, suddenly appeared as if out of nowhere. As if predestined, rain began to fall and huge lightning bolts brightened the nighttime skies. As the vampires approached the altar, a lightning bolt of almost unbelievable brilliance shattered the darkness.

Momentarily blinded by the flash, the young heroes covered their eyes. When their vision had cleared, they saw six downed figures, cloaked in smoking garments. An evil scent filled the night air. They had won! The world was once again safe from this evil force.

The merry warriors danced and shouted with glee. Her friends surrounded Tarah, declaring her the bravest person in the universe.

“The world is free of vampires at last!” shouted Thomas, Jerome and Julie in unison.

“I wonder,” mused Jerome, reminiscing about the helicopter pilot who most certainly was, himself, a vampire. Tarah’s work may not be finished yet.”

Trail of the Vampires

Answer Key

- | | |
|---|---------------------------------------|
| 1. Manchester Municipal | 23. 202 |
| 2. S. Willow Street | 24. Graticule tic mark |
| 3. Route through or around a city | 25. 0.5 ± 0.05 miles |
| 4. ~ 18 miles | 26. B [or Oxbow] |
| 5. F. E. Everitt | 27. B [or Bridge] |
| 6. Toll road | 28. $43^\circ 15'$ |
| 7. Main Street | 29. Suncook |
| 8. 3.0 ± 0.1 miles | 30. E [or 6] |
| 9. Little Turkey Road | 31. Strafford |
| 10. 325' | 32. Center Strafford |
| 11. 330' | 33. ~ 3 miles |
| 12. 340' | 34. SE |
| 13. Index | 35. Farmington |
| 14. Primary [all weather, hard surface] | 36. 1:24,000 |
| 15. St. Paul's School Cemetery [or Millville] | 37. 7.5 |
| 16. Millville Cemetery [or St. Paul's School] | 38. NH |
| 17. Carmelite Monastery | 39. Bald Cap Dome |
| 18. WKXL | 40. 2090 |
| 19. Vertical Control Station | 41. 9,168,784 [9,120,400 – 9,241,600] |
| 20. E or 6 | 42. 3081' |
| 21. Improved | 43. S 30° E $\pm 3^\circ$ |
| 22. 4 | 44. 7.2 ± 0.2 miles |

For information on how to quickly obtain a set of USGS Quads plus the Highway Map for **Trail of the Vampires** at a very reasonable cost, plus other coaching aides, visit the following site:

<http://www.otherworlds-edu.com>

Treasure Mountain, another free, downloadable Road Scholar exam located on this web site uses the same set of Quads plus highway map as the exam – **Trail of the Vampires**.

Participant Response Sheet

The following maps and quads will be used during this exam:

- 1. **New Hampshire Highway Map**, Rand-McNally **[HM]**
- 2. **Concord**, New Hampshire Quadrangle Map **[C]**
- 3. **Baxter Lake**, New Hampshire Quadrangle Map **[BL]**
- 4. **Mount Pisgah**, New Hampshire Quadrangle Map **[MP]**

1. _____	23. _____
2. _____	24. _____
3. _____	25. _____
4. _____	26. _____
5. _____	27. _____
6. _____	28. _____
7. _____	29. _____
8. _____	30. _____
9. _____	31. _____
10. _____	32. _____
11. _____	33. _____
12. _____	34. _____
13. _____	35. _____
14. _____	36. _____
15. _____	37. _____
16. _____	38. _____
17. _____	39. _____
18. _____	40. _____
19. _____	41. _____
20. _____	42. _____
21. _____	43. _____
22. _____	44. _____